SANYO

# TECHNICAL DATA
# &
# SERVICE MANUAL

ECO i DC Inverter
W-2 WAY MULTI

R410A

# 2-WAY ECO-i MULTI SYSTEM

| OUTDOOR MODEL No. | PRODUCT CODE No. | APPLICABLE INDOOR MODEL No. | V/ø/Hz |
|---|---|---|---|
| SPW-C0705DXHN8 | 85403283 | SPW-GU055XH<br>SPW-GU075XH<br>SPW-GU105XH | OUTDOOR<br>380-415/3ø/50<br><br>INDOOR<br>220-240/1ø/50 |
| SPW-C0905DXHN8 | 85403284 | | |
| SPW-C1155DXHN8 | 85403285 | | |
| SPW-C1305DXHN8 | 85403286 | | |
| SPW-C1405DXHN8 | 85403287 | | |

85464849253000

REFERENCE NO. SM830153

# IMPORTANT!
# Please Read Before Starting

This air conditioning system meets strict safety and operating standards. As the installer or service person, it is an important part of your job to install or service the system so it operates safely and efficiently.

**For safe installation and trouble-free operation, you must:**

- Carefully read this instruction booklet before beginning.
- Follow each installation or repair step exactly as shown.
- Observe all local, state, and national electrical codes.
- This product is intended for professional use. Permission from the power supplier is required when installing an outdoor unit that is connected to a 16 A distribution network.
- Pay close attention to all warning and caution notices given in this manual.

**WARNING** This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.

**CAUTION** This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

## If Necessary, Get Help

These instructions are all you need for most installation sites and maintenance conditions. If you require help for a special problem, contact our sales/service outlet or your certified dealer for additional instructions.

## In Case of Improper Installation

The manufacturer shall in no way be responsible for improper installation or maintenance service, including failure to follow the instructions in this document.

## SPECIAL PRECAUTIONS

### WARNING When Wiring

**ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. ONLY A QUALIFIED, EXPERIENCED ELECTRICIAN SHOULD ATTEMPT TO WIRE THIS SYSTEM.**

- Do not supply power to the unit until all wiring and tubing are completed or reconnected and checked.
- Highly dangerous electrical voltages are used in this system. Carefully refer to the wiring diagram and these instructions when wiring. Improper connections and inadequate grounding can cause **accidental injury or death.**
- **Ground the unit** following local electrical codes.
- Connect all wiring tightly. Loose wiring may cause overheating at connection points and a possible fire hazard.

### When Transporting

Be careful when picking up and moving the indoor and outdoor units. Get a partner to help, and bend your knees when lifting to reduce strain on your back. Sharp edges or thin aluminum fins on the air conditioner can cut your fingers.

### When Installing…

**... In a Room**

Properly insulate any tubing run inside a room to prevent "sweating" that can cause dripping and water damage to walls and floors.

**... In Moist or Uneven Locations**

Use a raised concrete pad or concrete blocks to provide a solid, level foundation for the outdoor unit. This prevents water damage and abnormal vibration.

**... In an Area with High Winds**

Securely anchor the outdoor unit down with bolts and a metal frame. Provide a suitable air baffle.

**... In a Snowy Area (for Heat Pump-type Systems)**

Install the outdoor unit on a raised platform that is higher than drifting snow. Provide snow vents.

### When Connecting Refrigerant Tubing

- Ventilate the room well, in the event that is refrigerant gas leaks during the installation. Be careful not to allow contact of the refrigerant gas with a flame as this will cause the generation of poisonous gas.
- Keep all tubing runs as short as possible.
- Use the flare method for connecting tubing.
- Apply refrigerant lubricant to the matching surfaces of the flare and union tubes before connecting them, then tighten the nut with a torque wrench for a leak-free connection.
- Check carefully for leaks before starting the test run.

**NOTE**

Depending on the system type, liquid and gas lines may be either narrow or wide. Therefore, to avoid confusion the refrigerant tubing for your particular model is specified as either "narrow" or "wide" than as "liquid" or "gas."

### When Servicing

- Turn the power OFF at the main power box (mains) before opening the unit to check or repair electrical parts and wiring.
- Keep your fingers and clothing away from any moving parts.
- Clean up the site after you finish, remembering to check that no metal scraps or bits of wiring have been left inside the unit being serviced.

**CAUTION**

- Ventilate any enclosed areas when installing or testing the refrigeration system. Escaped refrigerant gas, on contact with fire or heat, can produce dangerously toxic gas.
- Confirm after installation that no refrigerant gas is leaking. If the gas comes in contact with a burning stove, gas water heater, electric room heater or other heat source, it can cause the generation of poisonous gas.

## Check of Density Limit

**The room in which the air conditioner is to be installed requires a design that in the event of refrigerant gas leaking out, its density will not exceed a set limit.**

The refrigerant (R410A), which is used in the air conditioner, is safe, without the toxicity or combustibility of ammonia, and is not restricted by laws imposed to protect the ozone layer. However, since it contains more than air, it poses the risk of suffocation if its density should rise excessively. Suffocation from leakage of refrigerant is almost non-existent. With the recent increase in the number of high density buildings, however, the installation of multi air conditioner systems is on the increase because of the need for effective use of floor space, individual control, energy conservation by curtailing heat and carrying power, etc.

Most importantly, the multi air conditioner system is able to replenish a large amount of refrigerant compared to conventional individual air conditioners. If a single unit of the multi air conditioner system is to be installed in a small room, select a suitable model and installation procedure so that if the refrigerant accidentally leaks out, its density does not reach the limit (and in the event of an emergency, measures can be made before injury can occur).

In a room where the density may exceed the limit, create an opening with adjacent rooms, or install mechanical ventilation combined with a gas leak detection device. The density is as given below.

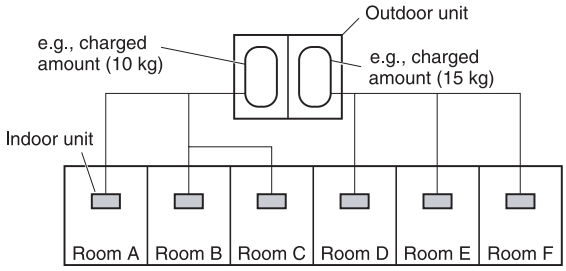
$$\frac{\text{Total amount of refrigerant (kg)}}{\text{Min. volume of the indoor unit installed room (m}^3\text{)}} \leq \text{Density limit (kg/m}^3\text{)}$$

The density limit of refrigerant which is used in multi air conditioners is 0.3 kg/m$^3$ (ISO 5149).

**NOTE**

1. If there are 2 or more refrigerating systems in a single refrigerating device, the amount of refrigerant should be as charged in each independent device.

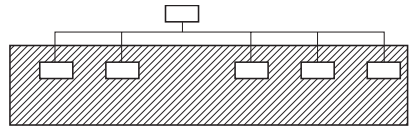
For the amount of charge in this example:



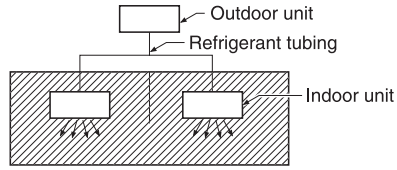

The possible amount of leaked refrigerant gas in rooms A, B and C is 10 kg.
The possible amount of leaked refrigerant gas in rooms D, E and F is 15 kg.

2. The standards for minimum room volume are as follows.

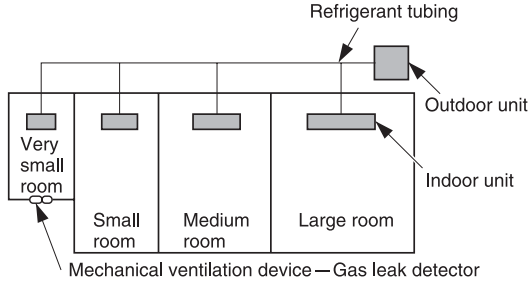
(1) No partition (shaded portion)



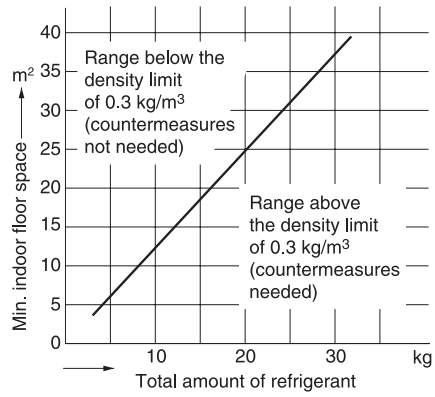
(2) When there is an effective opening with the adjacent room for ventilation of leaking refrigerant gas (opening without a door, or an opening 0.15% or larger than the respective floor spaces at the top or bottom of the door).




(3) If an indoor unit is installed in each partitioned room and the refrigerant tubing is interconnected, the smallest room of course becomes the object. But when mechanical ventilation is installed interlocked with a gas leakage detector in the smallest room where the density limit is exceeded, the volume of the next smallest room becomes the object.




3. The minimum indoor floor space compared with the amount of refrigerant is roughly as follows: (When the ceiling is 2.7 m high)




RoHS
- This product does not contain any hazardous substances prohibited by the RoHS Directive.

WARNING
- You are requested to use RoHS compliant parts for maintenance or repair.

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## Contents

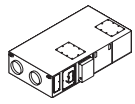
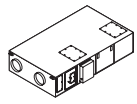
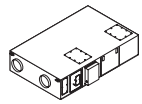
# 1. OUTLINE OF W-2Way ECO-i MULTI SYSTEM

**1. Line-up.....1-2**
**2. Features of W-2WAY ECO-i SYSTEM.....1-4**

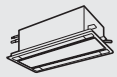
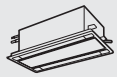
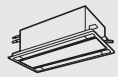
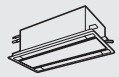
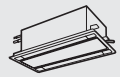
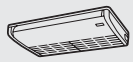
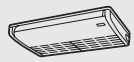
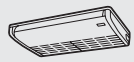
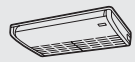
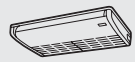
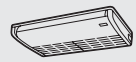
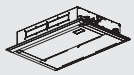
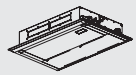
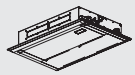
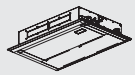
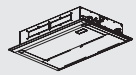
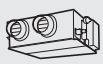
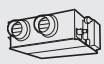
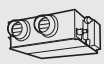
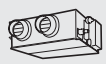
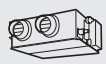
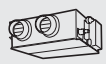
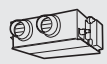
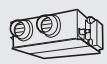
# 1. Line-up



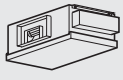
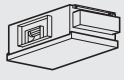
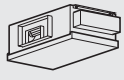
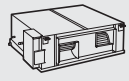
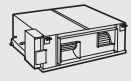
**Indoor units**

| Type | 50 (*) | 75 (*) | 100 (*) |
|---|---|---|---|
| Heat Recovery with Direct-Expansion Coil |  SPW-GU055XH |  SPW-GU075XH |  SPW-GU105XH |

(*) Numerical value is discharge air flow ($m^3/h$) volume.

| Type | 7 | 9 | 12 | 16 | 18 | 25 | 36 | 48 |
|---|---|---|---|---|---|---|---|---|
| Capacity: kW (BTU/h) Cooling / Heating | 2.2 (7,500) / 2.5 (8,500) | 2.8 (9,600) / 3.2 (11,000) | 3.6 (12,000) / 4.2 (14,000) | 4.5 (15,000) / 5.0 (17,000) | 5.6 (19,000) / 6.3 (21,000) | 7.3 (25,000) / 8.0 (27,000) | 10.6 (36,000) / 11.4 (39,000) | 14.0 (47,800) / 16.0 (54,600) |
| 4-Way Air Discharge Semi-Concealed Type (X Type) | XDR74GXH56(A/B) | XDR94GXH56(A/B) | XDR124GXH56(A/B) | XDR164GXH56(A/B) | XDR184GXH56(A/B) | XDR254GXH56(A/B) | XDR364GXH56(A/B) | *XDR484GXH56(A/B) |
| 2-Way Air Discharge Semi-Concealed Type (S Type) | SR74GXH56(A/B) |  SR94GXH56(A/B) |  SR124GXH56(A/B) |  SR164GXH56(A/B) |  SR184GXH56(A/B) |  SR254GXH56(A/B) | | |
| Wall-Mounted Type (K Type) | KR74GXH56(A/B) | KR94GXH56(A/B) | KR124GXH56(A/B) | KR164GXH56(A/B) | KR184GXH56(A/B) | KR254GXH56(A/B) | | |
| 1-Way Air Discharge Semi-Concealed Type (AD Type) | ADR74GXH56(A/B) | ADR94GXH56(A/B) | ADR124GXH56(A/B) | | | | | |
| Ceiling-Mounted Type (T Type) | | |  TDR124GXH56(A/B) |  TDR164GXH56(A/B) |  TDR184GXH56(A/B) |  TDR254GXH56(A/B) |  TDR364GXH56(A/B) |  TDR484GXH56(A/B) |
| 1-Way Air Discharge Semi-Concealed-Slim Type (LD Type) | |  LDR94GXH56(A/B) |  LDR124GXH56(A/B) |  LDR164GXH56(A/B) |  LDR184GXH56(A/B) |  LDR254GXH56(A/B) | | |
| Concealed-Duct Type (U Type) |  UR74GXH56(A/B) |  UR94GXH56(A/B) |  UR124GXH56(A/B) |  UR164GXH56(A/B) |  UR184GXH56(A/B) |  UR254GXH56(A/B) |  UR364GXH56(A/B) |  UR484GXH56(A/B) |
| Floor Standing Type (F Type) | FR74GXH56(A/B) | FR94GXH56(A/B) | FR124GXH56(A/B) | FR164GXH56(A/B) | FR184GXH56(A/B) | FR254GXH56(A/B) | | |
| Concealed Floor Standing Type (FM Type) | FMR74GXH56(A/B) | FMR94GXH56(A/B) | FMR124GXH56(A/B) | FMR164GXH56(A/B) | FMR184GXH56(A/B) | FMR254GXH56(A/B) | | |

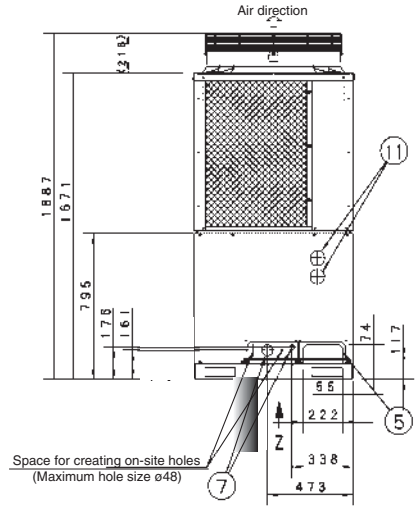
* SPW-XDR604GXH56(A/B) is available.

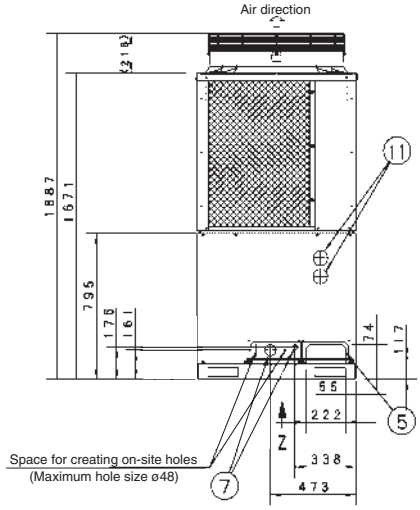
| Type | 25 | 36 | 48 | 76 | 96 |
|---|---|---|---|---|---|
| Concealed-Duct High Static Pressure Type |  DR254GXH56(A/B) |  DR364GXH56(A/B) |  DR484GXH56(A/B) |  DR764GXH56(A/B) |  DR964GXH56(A/B) |

# 1. Line-up



**Outdoor units**

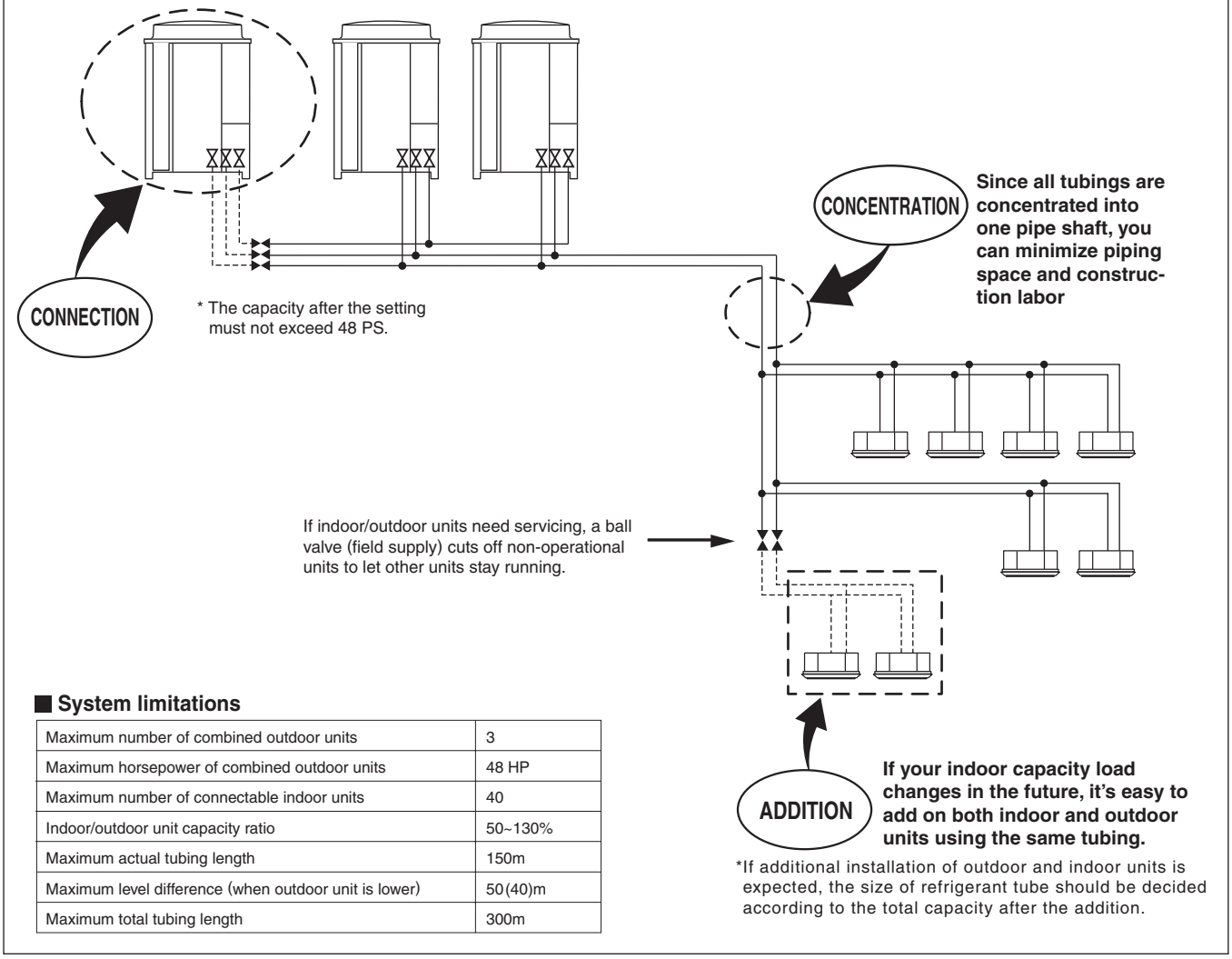
| Type | 70 | 90 | 115 |
|---|---|---|---|
| Capacity: kW (BTU/h)<br>Cooling / Heating | 22.4 (76,400)<br>/ 25.0 (85,300) | 28.0 (95,500)<br>/ 31.5 (107,500) | 33.5 (114,300)<br>/ 37.5 (128,000) |
| Outdoor Unit |  C0705DXHN8 C0905DXHN8 C1155DXHN8 | | |

| Type | 130 | 140 |
|---|---|---|
| Capacity: kW (BTU/h)<br>Cooling / Heating | 40.0 (136,500)<br>/ 45.0 (153,600) | 45.0 (153,600)<br>/ 50.0 (170,600) |
| Outdoor Unit |  C1305DXHN8 C1405DXHN8 | |

# 2. Features of W-2WAY ECO-i SYSTEM

## 2-1. Outline of W-2WAY ECO-i SYSTEM

### ■ System example




### ■ System limitations

| | |
|---|---|
| Maximum number of combined outdoor units | 3 |
| Maximum horsepower of combined outdoor units | 48 HP |
| Maximum number of connectable indoor units | 40 |
| Indoor/outdoor unit capacity ratio | 50~130% |
| Maximum actual tubing length | 150m |
| Maximum level difference (when outdoor unit is lower) | 50(40)m |
| Maximum total tubing length | 300m |

### ■ Combination of outdoor units

The DC inverter unit can be used independently or in combination.

**CAUTION**

- **R407C models and R22 models must not be used in combination with each other.**

**Combination of outdoor units**

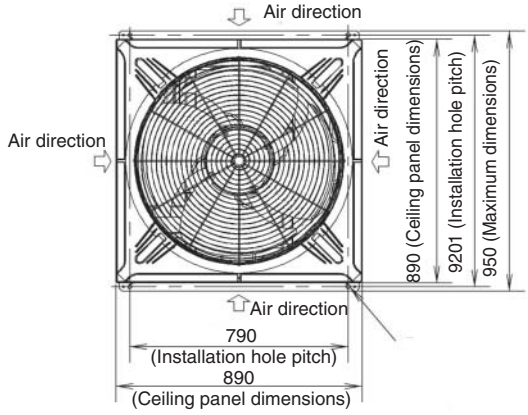
| Total horse power / Type (hp) | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | 42 | 44 | 46 | 48 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 1 | | | | | 1 | | | | | | | | | | | | | | | |
| 10 | | 1 | | | | 1 | 2 | 1 | 1 | 1 | | | | 2 | 2 | 1 | 1 | 1 | | | |
| 12 | | | 1 | | | | | 1 | | | 1 | | | | | 1 | | | 1 | | |
| 14 | | | | 1 | | | | | 1 | | | 1 | | 1 | | | 1 | | | 1 | |
| 16 | | | | | 1 | | | | | 1 | 1 | 1 | 2 | | 1 | 1 | 1 | 2 | 2 | 2 | 3 |

# 2. Features of W-2WAY ECO-i SYSTEM

## ■ Dimensions

8, 10, 12, 14, 16 HP

| | |
|---|---|
| 8HP | SPW-C0705DXHN8 |
| 10HP | SPW-C0905DXHN8 |
| 12HP | SPW-C1155DXHN8 |
| 14HP | SPW-C1305DXHN8 |
| 16HP | SPW-C1405DXHN8 |

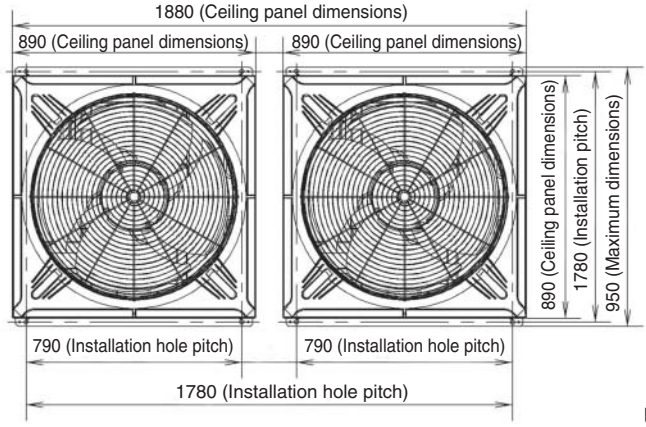



Unit: mm

Top view

## ■ Dimensions of unit combinations

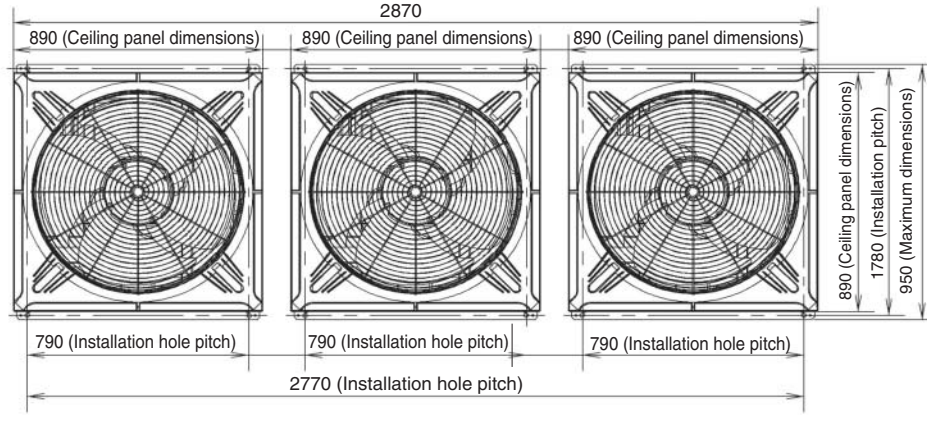
18 – 32 HP




Unit: mm

Top view

34 – 48 HP




Top view

Unit: mm

# 2. Features of W-2WAY ECO-i SYSTEM



## ■ Capacity control

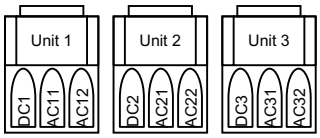
The compressor combination (DC inverter compressor + constant-speed compressor) allows smooth capacity control from 0.8 HP to 48 HP.

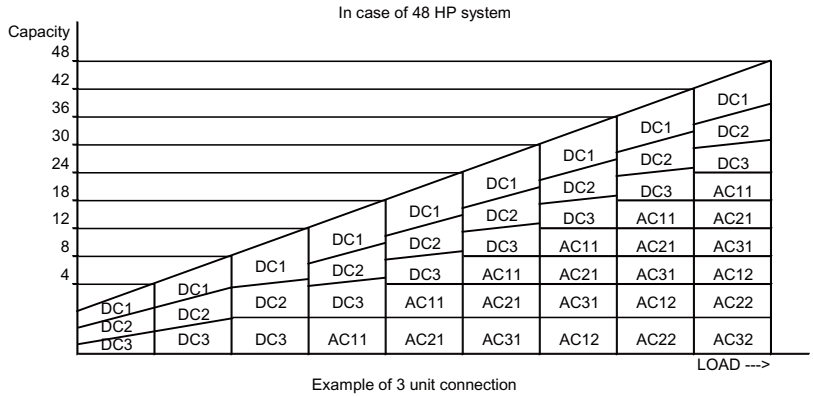
### Realization of smooth capacity control from 0.8HP to 48HP

Capacity control is possible smoothly with a DC inverter compressor. The right graph shows the image of the operating combination of compressors in case of 48HP system. In actual operation, the combination will be changed by operating condition, operating time amount, priority of compressor and so on.

| Comp. HP | Unit1(main) | Unit2(sub1) | Unit3(sub2) |
|---|---|---|---|
| DC comp. | 4.0 | 4.0 | 4.0 |
| AC1 comp. | 6.0 | 6.0 | 6.0 |
| AC2 comp. | 6.0 | 6.0 | 6.0 |

*48HP = SPW-140 Type x 3




Example of 3 unit connection

## Contents

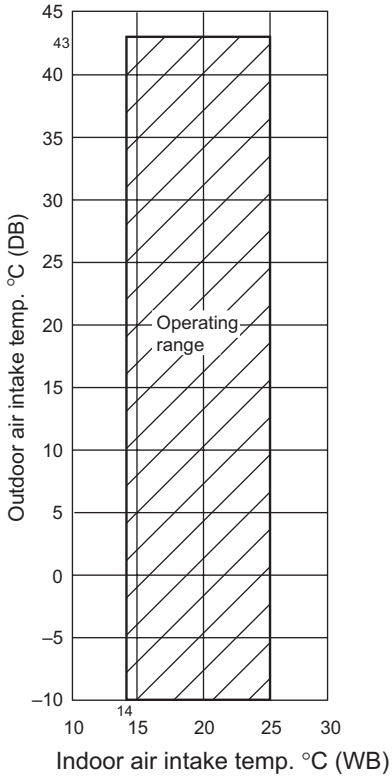
# 2. DESIGN OF W-2WAY ECO-i SYSTEM

**1. Model Selecting and Capacity Calculator .....2-2**
**2. System Design.....2-17**
**3. Electrical Wiring.....2-23**
**4. Installation Instructions .....2-27**

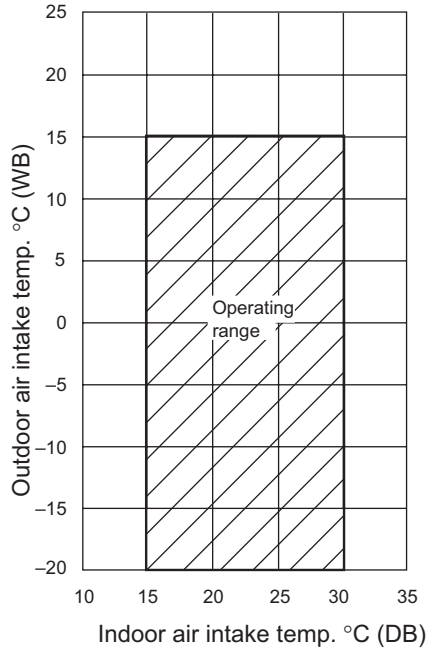
# 1. Model Selecting and Capacity Calculator

## 1-1. Operating Range

Cooling




Heating




2

# 1. Model Selecting and Capacity Calculator

## 1-2. Procedure for Selecting Models and Calculating Capacity

### ■ Model Selection Procedure

Select the model and calculate the capacity for each refrigerant system according to the procedure shown below.

Calculation of the indoor air-conditioning load
- Calculate the maximum air-conditioning load for each room or zone.

↓

Selection of an air conditioning system
- Select the ideal air conditioning system for air conditioning of each room or zone.

↓

Design of the control system
- Design a suitable control system for the selected air conditioning system.

↓

Preliminary selection of indoor and outdoor units
- Make preliminary selections that are within the allowable range for the system. ..... **2**-4 ~ **2**-10

↓

Check of the tubing length and elevation difference
- Check that the length of refrigerant tubing and the elevation difference are within the allowable ranges..... **2**-4

↓

Calculation of the corrected outdoor unit capacity
- Capacity correction coefficient for model ..... **2**-11, 13, 14
- Capacity correction coefficient for outdoor temperature conditions .....**2**-11, 13
- Capacity correction coefficient for tubing length and elevation difference ..... **2**-11, 14
- Heating capacity correction coefficient for frosting/defrosting ..... **2**-11, 13

↓

Calculation of the corrected capacity for each indoor unit
- Capacity correction coefficient for indoor temperature conditions ..... **2**-11, 14
- Capacity distribution ratio based on the tubing length and elevation difference ..... **2**-11, 14

↓

Calculation of the actual capacity for each indoor unit
- Calculate the corrected indoor/outdoor capacity ratio, based on the corrected outdoor unit capacity and the total corrected capacity of all indoor units in the same system. Use the result to calculate the capacity correction coefficient for the indoor units. ..... **2**-11 ~ **2**-14
- Multiply the corrected capacity of each indoor unit by the capacity correction coefficient to calculate the actual capacity for each indoor unit. ..... **2**-12

↓

Recheck of the actual capacity for each indoor unit
- If the capacity is inadequate, reexamine the unit combinations.
  Example 1: Increasing the outdoor unit capacity..... **2**-18
  Example 2: Increasing the indoor unit capacity ..... **2**-19
- Increasing the tubing size ..... **2**-20

↓

Design of tubing
- Create a tubing design which minimizes the amount of additional refrigerant charge as much as possible. ..... **2**-4 ~ **2**-6
- If tubing extension for additional unit is expected in the future, create the tubing design with adequate consideration for this extension.
- Select the tubing size for the main tube (LA) up to the No. 1 distribution joint based on the rated cooling capacity of the outdoor unit. Select tubing sizes after the distribution point based on the total rated cooling capacity of the connected indoor units.
- Increasing the tubing size of the wide tubes can reduce the loss of capacity caused by longer tubing lengths. (Only the main wide tube with the largest tube diameter (main tube LA and main tubes after the distribution point that are the same size as LA) can be changed.) In this case, it is necessary to recalculate the actual indoor unit capacities. ..... **2**-20

↓

Calculation of additional refrigerant charge amount
- Calculate the additional refrigerant charge from the diameters and lengths of the refrigerant tubing. Even if the wide tubing diameter was increased, determine the additional refrigerant charge based only on the narrow tubing size. ..... **2**-21
- Check the minimum indoor capacity (limit density) with respect to the amount of refrigerant. If the limit density is exceeded, be sure to install ventilation equipment or take other corrective steps. **2**-22

↓

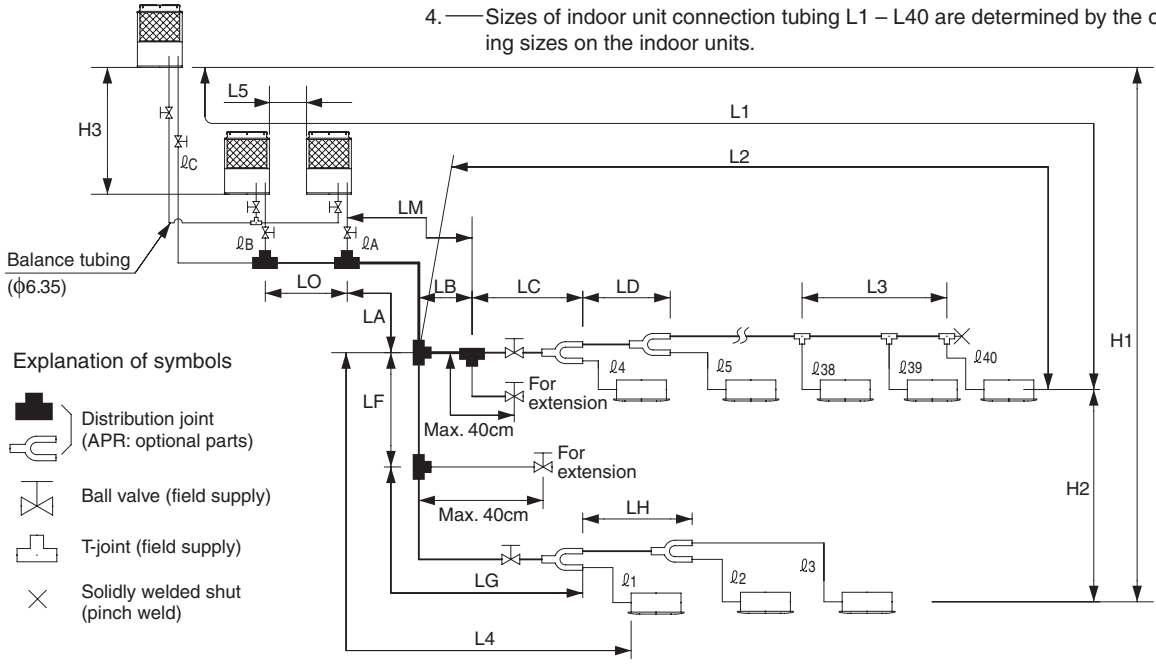
Design of electrical wiring capacity
- Select a wiring capacity according to the method of power supply. ..... **2**-24

# 1. Model Selecting and Capacity Calculator

## 1-3. Tubing Length

Select the installation location so that the length and size of refrigerant tubing are within the allowable range shown in the figure below.

1. —— Main tubing length LM = LA + LB … ≤ 80 m
2. —— Main distribution tubes LC – LH are selected according to the capacity after the distribution joint.
3. The outdoor connection main tubing (LO portion) is determined by the total capacity of the outdoor units that are connected to the tube ends.
4. —— Sizes of indoor unit connection tubing L1 – L40 are determined by the connection tubing sizes on the indoor units.




Note: Do not use commercially available T-joints for the liquid tubing and parts.

* Be sure to use special R410A distribution joints (APR: optional parts) for outdoor unit connections and tubing branches.

**Table 1-1 Ranges that Apply to Refrigerant Tubing Lengths and to Differences in Installation Heights**

| Item | Mark | Contents | | Length(m) |
|---|---|---|---|---|
| Allowable tubing length | L1 | Max. tubing length | Actual length | ≤ 150 |
| | | | Equivalent length | ≤ 175 |
| | L (L2 – L4) | Difference between max. length and min. length from the No.1 distribution joint | | ≤ 40 |
| | LM | Max. length of main tubing (at max. diameter) | | ≤ 80*3 |
| | ℓ1, ℓ2~ℓ40 | Max. length of each distribution tube | | ≤ 30 |
| | L1 + ℓ1 + ℓ2~ℓ39 + ℓA + ℓB + LF + LG + LH | Total max. tubing length including length of each distribution tube (only liquid tubing) | | ≤ 300 |
| | L5 | Distance between outdoor units | | ≤ 10 |
| Allowable elevation difference | H1 | When outdoor unit is installed higher than indoor unit | | ≤ 50 |
| | | When outdoor unit is installed lower than indoor unit | | ≤ 40 |
| | H2 | Max. difference between indoor units | | ≤ 15 |
| | H3 | Max. difference between outdoor units | | ≤ 4 |
| Allowable length of joint tubing | L3 | T-joint tubing (field-supply); Max. tubing length between the first T-joint and solidly welded-shut end point | | ≤ 2 |

L = Length, H = Height

**NOTE**

1: The outdoor connection main tubing (LO portion) is determined by the total capacity of the outdoor units that are connected to the tube ends.

2: If the longest tubing length (L1) exceeds 90 m (equivalent length), increase the sizes of the main tubes (LM) by 1 rank for gas tubes and liquid tubes. (Use a field supply reducer.) (Select the tube size from the table of main tube sizes (Table 1-3) on the following page (LA table), and from the table of refrigerant tubing sizes (Table 1-8) on the second following page.)

# 1. Model Selecting and Capacity Calculator

3: If the longest main tube length (LM) exceeds 50 m, increase the main tube size at the portion before 50 m by 1 rank for the gas tubes. (Use a field supply reducer.)
(For the portion that exceeds 50 m, set based on the main tube sizes (LA) listed in the table on the following page.)

4: If the size of the existing tubing is already larger than the standard tubing size, it is not necessary to further increase the size.

* If the existing tubing is used, and the amount of on-site additional refrigerant charge exceeds the value listed below, then change the size of the tubing to reduce the amount of refrigerant.
Max. additional charge for 1 outdoor unit: 28 kg
Max. additional charge for 2 outdoor units: 50 kg
Max. additional charge for 3 outdoor units: 60 kg

**Table 1-2 Refrigerant Charge Amount at Shipment (for outdoor unit)**

| SPW-C0705DXHN8 | SPW-C0905DXHN8 | SPW-C1155DXHN8 | SPW-C1305DXHN8 | SPW-C1405DXHN8 |
|---|---|---|---|---|
| 12 kg | 12 kg | 12 kg | 13 kg | 13 kg |

### Additional Refrigerant Charge

Additional refrigerant charge amount is calculated from the liquid tubing total length as follows.

**Table 1-3 Amount of Refrigerant Charge Per Meter, According to Liquid Tubing Size**

| Liquid tubing size | Amount of refrigerant charge/m (g/m) |
|---|---|
| ø6.35 | 26 |
| ø9.52 | 56 |
| ø12.7 | 128 |
| ø15.88 | 185 |
| ø19.05 | 259 |
| ø22.22 | 366 |

Required amount of charge = (Amount of refrigerant charge per meter of each size of liquid tube × its tube length) + (...) + (...)

*Always charge accurately using a scale for weighing.
*If the existing tubing is used, and the amount of on-site additional refrigerant charge exceeds the value listed below, then change the size of the tubing to reduce the amount of refrigerant.
Max. additional charge for 1 outdoor unit : 28 kg
Max. additional charge for 2 outdoor units: 50 kg
Max. additional charge for 3 outdoor units: 60 kg

**Table 1-4 System Limitations**

| | |
|---|---|
| Max. No. allowable connected outdoor units | 3 *2 |
| Max. capacity allowable connected outdoor units | 135 kW (48 hp) |
| Max. connectable indoor units | 40 *1 |
| Max. allowable indoor/outdoor capacity ratio | 50 – 130 % |

*1: In the case of 22 hp (type 61.5 kW) or smaller units, the number is limited by the total capacity of the connected indoor units.
*2: Up to 3 units can be connected if the system has been extended.

# 1. Model Selecting and Capacity Calculator

## 1-4 Tubing Size

**Table 1-5 Main Tubing Size (LA)**

Unit: mm

| kW | 22.4 | 28.0 | 33.5 | 40.0 | 45.0 | 50.4 | 56.0 | 61.5 | 68.0 | 73.0 | 78.5 | 85.0 | 90.0 | 96.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total system horsepower | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 |
| Combined outdoor units | 8 | 10 | 12 | 14 | 16 | 10<br>8 | 10<br>10 | 12<br>10 | 14<br>10 | 16<br>10 | 16<br>12 | 16<br>14 | 16<br>16 | 14<br>10<br>10 |
| Gas tubing (mm) | ø19.05 | ø22.22 | ø25.40 | | ø28.58 | | | | | ø31.75 | | | | |
| Liquid tubing (mm) | ø9.52 | | ø12.70 | | | ø15.88 | | | | ø19.05 | | | | |

| kW | 101.0 | 106.5 | 113.0 | 118.0 | 123.5 | 130.0 | 135.0 |
|---|---|---|---|---|---|---|---|
| Total system horsepower | 36 | 38 | 40 | 42 | 44 | 46 | 48 |
| Combined outdoor units | 16<br>10<br>10 | 16<br>12<br>10 | 16<br>14<br>10 | 16<br>16<br>10 | 16<br>16<br>12 | 16<br>16<br>14 | 16<br>16<br>16 |
| Gas tubing (mm) | ø38.10 | | | | | | |
| Liquid tubing (mm) | ø19.05 | | | | | | |

*1: If future extension is planned, select the tubing diameter based on the total horsepower after extension. However extension is not possible if the resulting tubing size is two ranks higher.
*2: The balance tube (outdoor unit tube) diameter is ø6.35.
*3: Type 1 tubing should be used for the refrigerant tubes.
*4: If the length of the longest tube (L1) exceeds 90 m (equivalent length), increase the main tube (LM) size by 1 rank for the gas and liquid tubes. (Use field-supply reducers.) (Select from Table 1-5 and Table 1-9.)
*5: If the longest main tube length (LM) exceeds 50 m, increase the main tube size at the portion before 50 m by 1 rank for the gas tubes.

(For the portion that exceeds 50 m, set based on the main tube sizes (LA) listed in the table above.)

### ■ Size of tubing (LO) between outdoor units

Select the size of tubing between outdoor units based on the main tubing size (LA) as given in the table above.

Unit: mm

**Table 1-6 Main Tubing Size After Distribution (LB, LC...)**

hp = horsepower

| Total capacity after distribution | Below kW / Over kW | 7.1 (2.5 hp) / – | 16.0 (6 hp) / 7.1 (2.5 hp) | 22.5 (8.1 hp) / 16.0 (6 hp) | 30.0 (11 hp) / 22.5 (8.1 hp) | 42.0 (15 hp) / 30.0 (11 hp) | 52.4 (19 hp) / 42.0 (15 hp) | 70.0 (25 hp) / 52.4 (19 hp) | 98.0 (35 hp) / 70.0 (25 hp) | – / 98.0 (35 hp) |
|---|---|---|---|---|---|---|---|---|---|---|
| Tubing size | Gas tubing (mm) | ø12.7 | ø15.88 | ø19.05 | ø22.22 | ø25.4 | ø28.58 | ø28.58 | ø31.75 | ø38.1 |
| | Liquid tubing (mm) | ø9.52 | ø9.52 | ø9.52 | ø9.52 | ø12.7 | ø12.7 | ø15.88 | ø19.05 | ø19.05 |

**Note:** In case the total capacity of connected indoor units exceeds the total capacity of the outdoor units, select the main tubing size for the total capacity of the outdoor units. (Especially the main tubing segments of LA, LB and LF.)

# 1. Model Selecting and Capacity Calculator

**Table 1-7 Amount of Refrigerant Charge**

| Liquid tubing size | Amount of refrigerant charge/m (g/m) |
|---|---|
| ø6.35 | 26 |
| ø9.52 | 56 |
| ø12.7 | 128 |
| ø15.88 | 185 |
| ø19.05 | 259 |
| ø22.22 | 366 |

**Table 1-8 Outdoor Unit Tubing Connection Size (ℓA–ℓC)** Unit: mm

| kW | 22.4 | 28.0 | 33.5 | 40.0 | 45.0 |
|---|---|---|---|---|---|
| Gas tubing | ø19.05 | ø22.22 | ø25.4 | | ø 28.58 |
| | Brazing connection | | | | |
| Liquid tubing | ø9.52 | | ø12.7 | | |
| | Flare connection | | | | |
| Balance tubing | ø6.35 | | | | |
| | Flare connection | | | | |

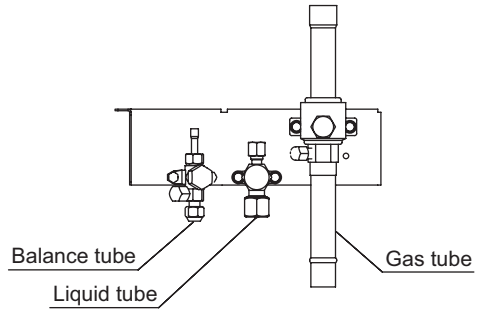



**Table 1-9 Indoor Unit Tubing Connection Size**

| Indoor unit type | 7 | 9 | 12 | 16 | 18 | 25 | 36 | 48 | 76 | 96 |
|---|---|---|---|---|---|---|---|---|---|---|
| Gas tubing (mm) | ø12.7 | | | | | ø15.88 | | | ø19.05 | ø22.22 |
| Liquid tubing (mm) | ø6.35 | | | | | ø9.52 | | | | |

**Note:** Use C1220T-1/2H material for tubing over ø22.22.

**Table 1-10 Refrigerant tubing (Existing tubing can be used.)**

| Tubing size (mm) | | | |
|---|---|---|---|
| Material O | | Material 1/2H•H | |
| ø6.35 | t0.8 | ø22.22 | t1.0 |
| ø9.52 | t0.8 | ø25.40 | t1.0 |
| ø12.7 | t0.8 | ø28.58 | t1.0 |
| ø15.88 | t1.0 | ø31.75 | t1.1 |
| ø19.05 | over t1.0 | ø38.10 | over t1.15 |
| | | ø41.28 | t1.20 |

* When bending the tubes, use a bending radius that is at least 4 times the outer diameter of the tubes. In addition, take sufficient care to avoid crushing or damaging the tubes when bending them.

# 1. Model Selecting and Capacity Calculator

## ■ Straight equivalent length of joints

### 1-5. Straight Equivalent Length of Joints

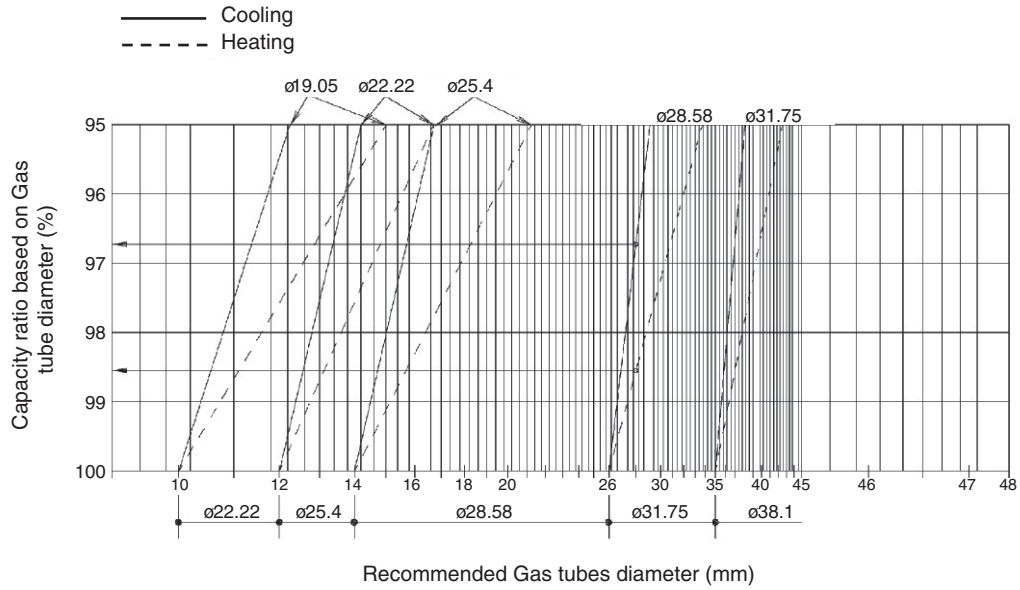
Design the tubing system by referring to the following table for the straight equivalent length of joints.

**Straight Equivalent Length of Joints**

| Wide tubing size (mm) | 12.7 | 15.88 | 19.05 | 22.22 | 25.4 | 28.58 | 31.8 | 38.1 |
|---|---|---|---|---|---|---|---|---|
| 90° elbow | 0.3 | 0.35 | 0.42 | 0.48 | 0.52 | 0.57 | 0.7 | 0.79 |
| 45° elbow | 0.23 | 0.26 | 0.32 | 0.36 | 0.39 | 0.43 | 0.53 | 0.59 |
| U-shape tube bent (R60 - 100 mm) | 0.9 | 1.05 | 1.26 | 1.44 | 1.56 | 1.71 | 2.1 | 2.37 |
| Trap bend | 2.3 | 2.8 | 3.2 | 3.8 | 4.3 | 4.7 | 5.0 | 5.8 |
| Y-branch distribution joint | Equivalent length conversion not needed. | | | | | | | |
| Ball valve for service | Equivalent length conversion not needed. | | | | | | | |

### ● Capacity loss caused by differences in tubing diameters

* Capacity loss will occur if a tubing system that matches the horsepower is not selected (for example, if a tubing system was determined and installed with no plan for extension and extension occurs later). The loss rate can be found from the graph below.




(Reading the graph)
<Example 1>
Currently a 20 HP system and ϕ 28.58 Gas tubing are used. Subsequently the system is expanded, with 8 HP added to the same tubing system.

- Horsepower after extension: 20 + 8 = 28 HP
- From the graph above: Cooling: Capacity ratio is 96.7%. Actual capacity = 28 × 0.967 = 27.1 HP
  Heating: Capacity ratio is 98.6%. Actual capacity = 28 × 0.986 = 27.6 HP

# 1. Model Selecting and Capacity Calculator

## ■ Additional refrigerant charge amount

Additional refrigerant charge amount is calculated from the liquid tubing total length as follows.

**Amount of Refrigerant Charge Per Meter, According to Liquid Tubing Size**

| Liquid tubing size | Amount of refrigerant charge/m (g/m) |
|---|---|
| ø6.35 | 26 |
| ø9.52 | 56 |
| ø12.7 | 128 |
| ø15.88 | 185 |
| ø19.05 | 259 |
| ø22.22 | 366 |

Required amount of charge = (Amount of refrigerant charge per meter of each size of liquid tube × its tube length) + (...) + (...)

*Always charge accurately using a scale for weighing.

## ■ Check of limit density

**WARNING**

**Always check the gas density limit for the room in which the unit is installed.**

### 1-6. Check of Limit Density

When installing an air conditioner in a room, it is necessary to ensure that if the refrigerant gas accidentally leaks out, its density does not exceed the limit level for that room.

If the density could exceed the limit level, it is necessary to provide an opening between the unit and the adjacent room, or to install mechanical ventilation which is interlocked with the leak detector.

**(Total refrigerant charged amount: kg)**

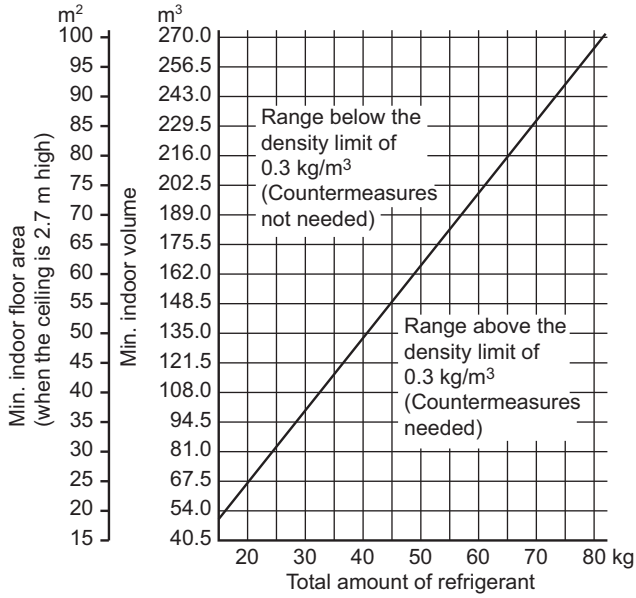
**(Min. indoor volume where the indoor unit is installed: $m^3$)**

**≤ Limit density 0.3 ($kg/m^3$)**

The limit density of refrigerant which is used in this unit is 0.3 $kg/m^3$ (ISO 5149).

The shipped outdoor unit comes charged with the amount of refrigerant fixed for each type, so add it to the amount that is charged in the field. (For the refrigerant charge amount at shipment, refer to the unit's nameplate.)

Minimum indoor volume and floor area as against the amount of refrigerant is roughly as given in the following table.




**CAUTION**

**Pay special attention to any location, such as a basement, etc., where leaking refrigerant can accumulate, since refrigerant gas is heavier than air.**

2

# 1. Model Selecting and Capacity Calculator

## 1-7. Calculation of Actual Capacity of Indoor Unit

### ■ Calculating the actual capacity of each indoor unit

Because the capacity of a multi air-conditioner changes according to the temperature conditions, tubing length, elevation difference and other factors, select the correct model after taking into account the various correction values. When selecting The model, calculate the corrected capacities of the outdoor unit and each indoor unit. Use the corrected outdoor unit capacity and the total corrected capacity of all the indoor units to calculate the actual final capacity of each indoor unit.

**1. Outdoor unit capacity correction coefficient**

Find the outdoor unit capacity correction coefficient for the following items.

(1) Capacity correction for the outdoor unit model
The capacity correction coefficient is 1.00.

(2) Capacity correction for the outdoor unit temperature conditions
From the graph of capacity characteristics on page **2**-12, use the outdoor temperature to find the capacity correction coefficient.

(3) Capacity correction for the outdoor unit tubing length and elevation difference
From the graph of capacity change characteristics on page **2**-13, use the tubing length and elevation difference to find the capacity correction coefficient.
The outdoor unit correction coefficient is the value which corresponds to the most demanding indoor unit.

(4) Capacity correction for outdoor unit frosting/defrosting during heating
From the table on page **2**-12, find the capacity correction coefficient.

**2. Indoor unit capacity correction coefficients**

Find the indoor unit capacity correction coefficient for the following items.

(2) Capacity correction for the indoor unit temperature conditions
From the graph of capacity characteristics on page **2**-13, use the indoor temperature to find the capacity correction coefficient.

(3) Capacity distribution ratio based on the indoor unit tubing length and elevation difference
First, in the same way as for the outdoor unit, use the tubing length and elevation difference for each indoor unit to find the correction coefficient from the graph of capacity change characteristics on page **2**-13. Then divide the result by the outdoor unit correction coefficient to find the capacity distribution ratio for each indoor unit.

| Capacity distribution ratio for each indoor unit (3) = Correction coefficient for that indoor unit / Correction coefficient for the outdoor unit |
|---|

**3. Calculating the corrected capacities for the outdoor unit and each indoor unit**

The corrected capacities for the outdoor unit and each indoor unit are calculated form the formula below.

**<Cooling>**

- Outdoor unit corrected cooling capacity (5) = Outdoor unit rated cooling capacity × Correction coefficient for model ((1) Page **2**-12) × Correction coefficient for outdoor temperature conditions ((2) Page **2**-12) × Correction coefficient for tubing length and elevation difference ((3) Page **2**-13)

* However, if the outdoor unit corrected cooling capacity [5] is greater than 100%, then the outdoor unit corrected cooling capacity [5] is considered to be 100%.

- Corrected cooling capacity of each indoor unit (5) = Rated cooling capacity for that indoor unit × Correction coefficient for indoor temperature conditions at that indoor unit ((2) Page **2**-13) × Distribution ratio based on tubing length and elevation difference at that indoor unit ((3) Page **2**-13)

| However, the corrected cooling capacity of each indoor unit is found as shown below.<br>If (2) < 100% and (2) × (3) > 100%: Corrected cooling capacity for that indoor unit [5] = Rated cooling capacity for that indoor unit<br>If (2) ≥ 100%: Corrected cooling capacity for that indoor unit (5) = Rated cooling capacity for that indoor unit × (2) |
|---|

# 1. Model Selecting and Capacity Calculator

**<Heating>**

- Outdoor unit corrected heating capacity (5) = Outdoor unit rated heating capacity × Correction coefficient for model ((1) Page **2**-12) × Correction coefficient for outdoor temperature conditions ((2) Page **2**-12) × Correction coefficient for tubing length and elevation difference ((3) Page **2**-13) × Correction coefficient for frosting/defrosting ((4) Page **2**-12)

* However, if the outdoor unit corrected heating capacity [5] is greater than 100%, then the outdoor unit corrected heating capacity is considered to be 100%.

- Corrected heating capacity of each indoor unit (5) = Rated heating capacity for that indoor unit × Correction coefficient for indoor temperature conditions at that indoor unit ((2) Page **2**-13) × Distribution ratio based on tubing length and elevation difference at that indoor unit.

However, the corrected heating capacity of each indoor unit is found as shown below.
If (2) < 100% and (2) × (3) > 100%: Corrected heating capacity for that indoor unit (5) = Rated heating capacity for that indoor unit
If (2) ≥ 100%: Corrected heating capacity for that indoor unit (5) = Rated heating capacity for that indoor unit × (2)

* Characteristic graphs are shown on the pages listed above next to each correction item. Find each correction coefficient from the appropriate conditions.

### 4. Calculating the actual indoor unit capacity based on the indoor/outdoor corrected capacity ratio

Calculate the actual capacity of each indoor unit from the values (found in (3)) for the corrected outdoor unit capacity and the corrected capacity of each indoor unit.

**<Cooling capacity>**

Corrected indoor/outdoor capacity ratio during cooling (Ruc) = Total corrected cooling capacity of all indoor units in that system / Corrected outdoor unit cooling capacity

If the corrected outdoor unit cooling capacity is greater than or equal to the total corrected unit cooling capacity of all indoor units in that system (Ruc ≤ 1), then:

Actual cooling capacity of each indoor unit (7) = Corrected cooling capacity of each indoor unit (5) (In other words, the correction coefficient (6), based on the corrected indoor/outdoor capacity ratios for each indoor unit, is 1.)

If the corrected outdoor unit cooling capacity is less than the total corrected unit cooling capacity of all indoor units in that system (Ruc > 1), then:

(Actual cooling capacity of each indoor unit (7)) = (Corrected cooling capacity of each indoor unit (5)) × $\underline{(0.25 \times Ruc + 0.75) / Ruc}$

(In other words, the correction coefficient (6), based on the corrected indoor/outdoor capacity ratios for each indoor unit, is the underlined part in the formula above.)

**<Heating capacity>**

Corrected indoor/outdoor capacity ratio during heating (Ruh) = Total corrected heating capacity of all indoor units in that system / Corrected outdoor unit heating capacity

If the corrected outdoor unit heating capacity is greater than or equal to the total corrected unit heating capacity of all indoor units in that system (Ruh ≤ 1), then:

Actual heating capacity of each indoor unit (7) = Corrected heating capacity of each indoor unit (5)

(In other words, the correction coefficient (6), based on the corrected indoor/outdoor capacity ratios for each indoor unit, is 1.)

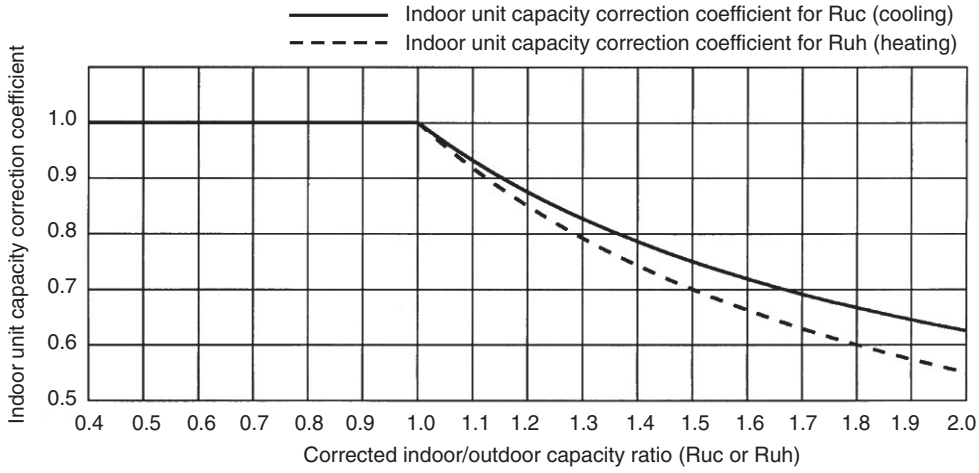
If the corrected outdoor unit heating capacity is less than the total corrected unit heating capacity of all indoor units in that system (Ruh > 1), then:

(Actual heating capacity of each indoor unit (7)) = (Corrected heating capacity of each indoor unit (5)) × $\underline{(0.1 \times Ruh + 0.9) / Ruh}$

(In other words, the correction coefficient (6), based on the corrected indoor/outdoor capacity ratios for each indoor unit, is the underlined part in the formula above.)

# 1. Model Selecting and Capacity Calculator

Refer to the graph below for the correction coefficients for Ruc and Ruh.

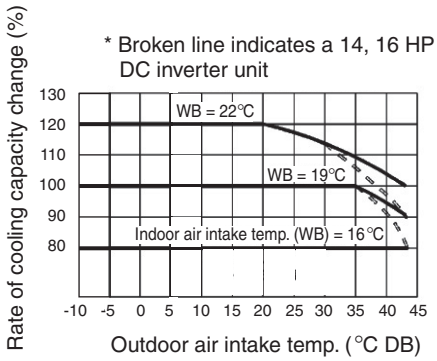



**Note:** When Ruc or Ruh is less than or equal to 1.0, the indoor unit capacity correction coefficient for both Ruc and Ruh is 1.0.

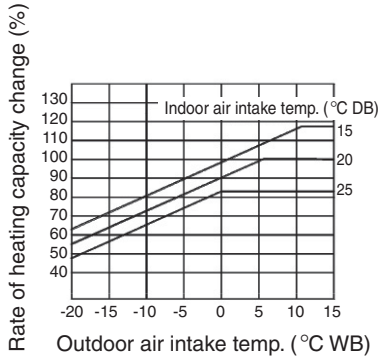
### 5. Graph of capacity correction coefficients

#### ■ Graph of outdoor unit capacity characteristics (1 – (2))

**Outdoor unit cooling capacity characteristics**




**Outdoor unit heating capacity characteristics**




#### ■ Outdoor unit heating capacity correction coefficient during frosting/defrosting (1 – (4))

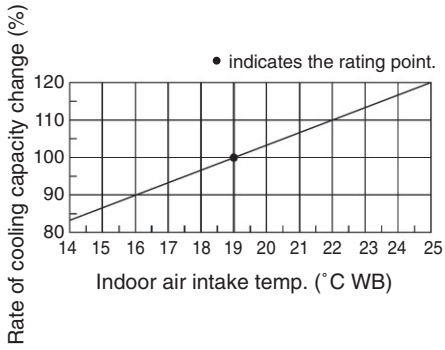
| Outdoor intake air temp. (°CWB RH85%) | –20 | –15 | –10 | –8 | –6 | –5 | –4 | –2 | –1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Correction coefficient | 0.97 | 0.97 | 0.97 | 0.96 | 0.94 | 0.91 | 0.89 | 0.87 | 0.87 | 0.87 | 0.88 | 0.89 | 0.91 | 0.92 | 0.95 | 1.0 |

* To calculate the heating capacity with consideration for frosting/defrosting operation, multiply the heating capacity found from the capacity graph by the correction coefficient from the table above.

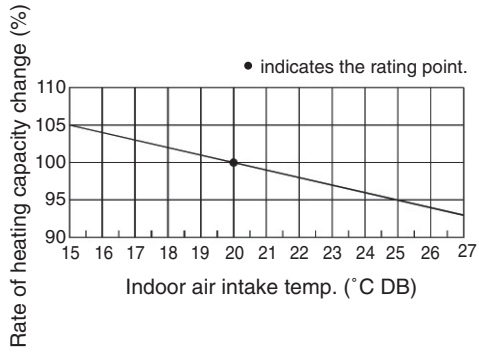
# 1. Model Selecting and Capacity Calculator

## ■ Graph of indoor unit capacity characteristics (2 – (2))

**Indoor unit cooling capacity characteristics**

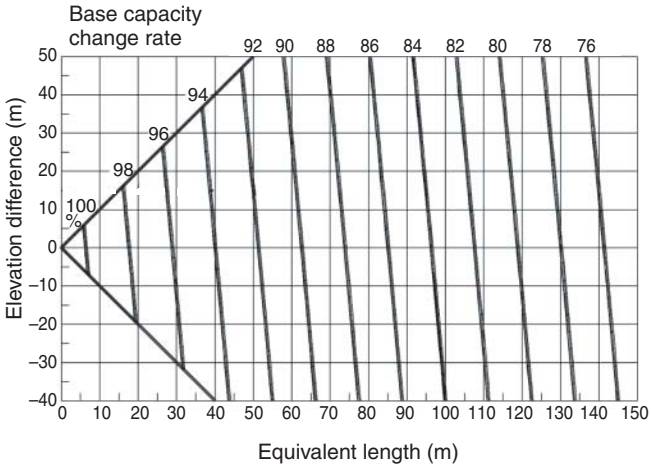



**Indoor unit heating capacity characteristics**

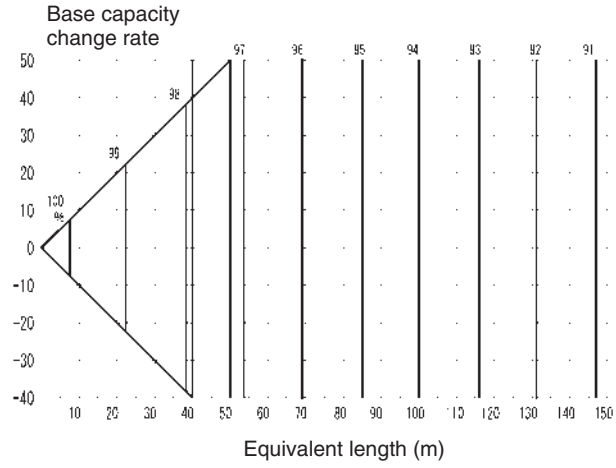



## ■ Graph of capacity change characteristics resulting from tubing length and elevation difference (1 / 2 – (3))

<Cooling>




<Heating>




The positive side for the elevation difference indicates that the outdoor unit is installed at a higher position than the indoor units. The negative side indicates the opposite.

- The capacity loss that is caused by the tubing length can be reduced by increasing the sizes of the discharge tubes and suction tubes. Refer to Table 1 and make the appropriate changes. However be sure that the total length does not exceed the maximum.
  * The only sizes which can be increased are the LM (main tube with the largest diameter) gas tubes, and the changes are limited to those shown in Table 1.
    In addition, note that the additional refrigerant charge is determined only by the narrow-tube size.

**Table 1 Equivalent Length Correction Coefficient when the Size of the Discharge Tubes and Suction Tubes (LM) is Increased**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Standard tubing diameter (gas tube, mm) | ø12.7 | ø15.88 | ø19.05 | ø22.22 | ø25.4 | ø28.58 | ø31.75 | ø38.1 |
| Tubing diameter after change (gas tube, mm) | ø15.88 | ø19.05 | ø22.22 | ø25.4 | ø28.58 | ø31.75 | ø38.1 | ø41.28 |
| Equivalent length correction coefficient | 0.4 | | 0.5 | | | 0.6 | | 0.7 |

* If the size of the discharge tubes and suction tubes (LM) has been increased, apply the correction coefficient from Table 1 and calculate the equivalent length of the LM section.

| |
|---|
| Equivalent length of tubing after size increase<br>= Standard tubing equivalent length × Equivalent length correction coefficient |

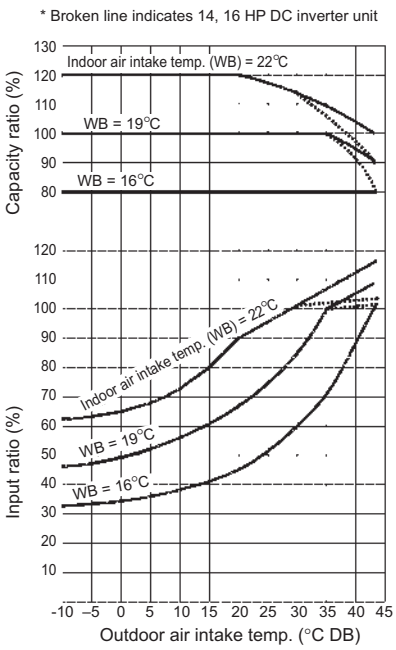
# 1. Model Selecting and Capacity Calculator

## 1-8. Capacity Correction Graph According to Temperature Condition

### ■ Capacity characteristics

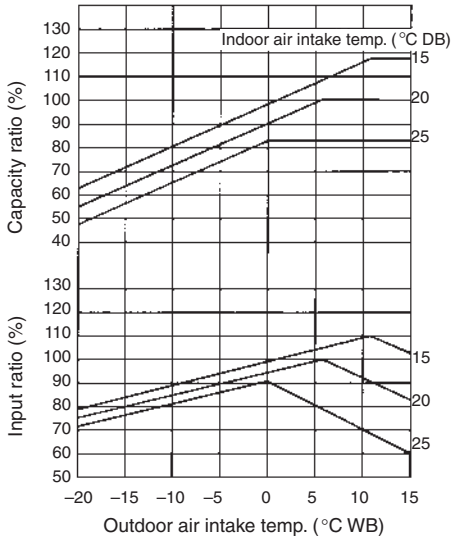
(The corrected capacity for specific temperature conditions can be found from the graphs below.)

<Cooling>

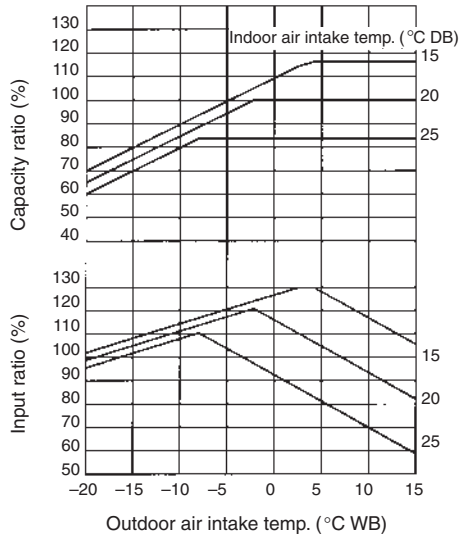



<Heating>

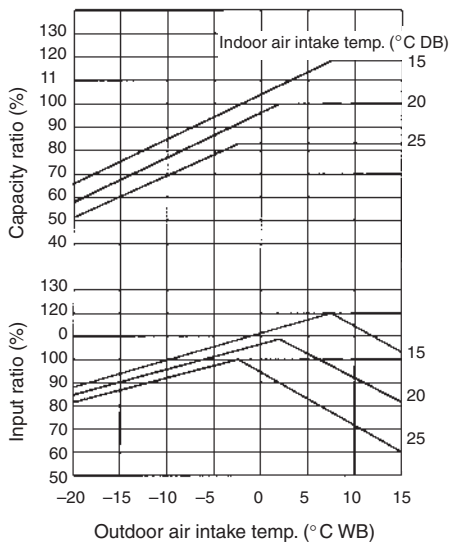
■ 8HP



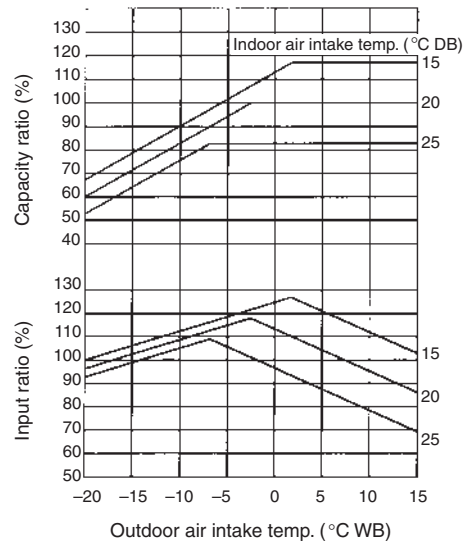

■ 10HP




■ 12HP




■ 14HP, 16HP




● **Heating capacity correction coefficients for frost/defrost operation**

| Outdoor intake air temp. (°C WB RH85%) | –20 | –15 | –10 | –8 | –6 | –5 | –4 | –2 | –1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Correction coefficient | 0.97 | 0.97 | 0.97 | 0.96 | 0.94 | 0.91 | 0.89 | 0.87 | 0.87 | 0.87 | 0.88 | 0.89 | 0.91 | 0.92 | 0.95 | 1.0 |

* The heating capacity when frost/defrost operation is considered is calculated by multiplying the heating capacity found from the capacity graph by the correction coefficient from the table above.

# 1. Model Selecting and Capacity Calculator

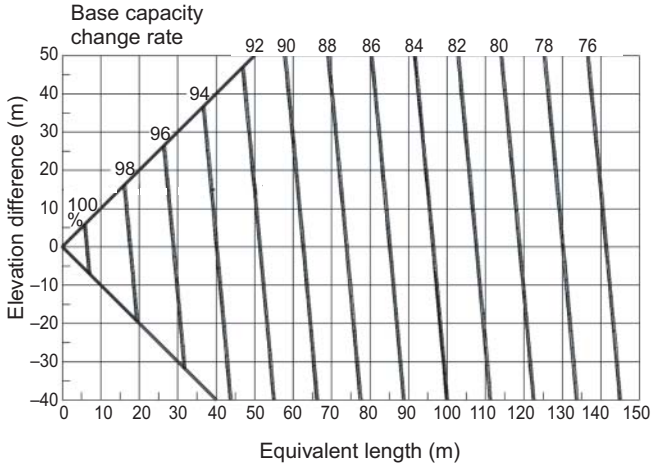
● **Rated performance values**

| Item / Type | Cooling | | Heating | |
|---|---|---|---|---|
| | Cooling capacity (kW) | Power consumption (kW) | Heating capacity (kW) | Power consumption (kW) |
| 70 | 22.4 | 5.99 | 25.0 | 6.17 |
| 90 | 28.0 | 7.90 | 31.5 | 7.15 |
| 115 | 33.5 | 9.58 | 37.5 | 9.60 |
| 130 | 40.0 | 11.6 | 45.0 | 11.5 |
| 140 | 45.0 | 13.3 | 50.0 | 13.2 |

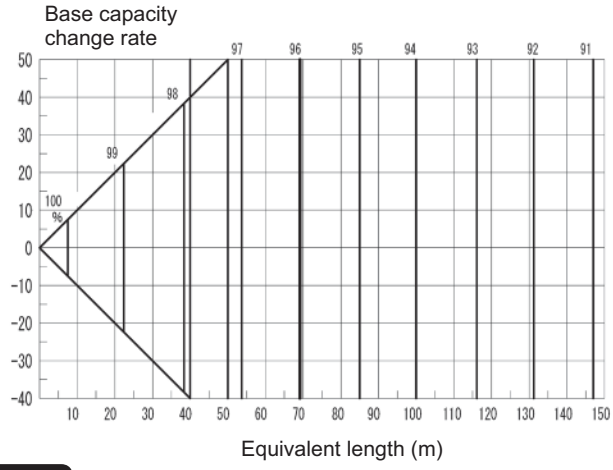
## 1-9. Capacity Correction Graph According to Tubing Length and Elevation Difference

### ■ Capacity change characteristics

<Cooling>




<Heating>




**NOTE**

The positive side for the elevation difference indicates that the outdoor unit is installed at a higher position than the indoor units. The negative side indicates the opposite.

*1 Sample calculations
(System: 20 HP, 50 m equivalent length, 15 m elevation difference
The cooling capacity and heating capacity for this system are found as shown below.)

● Cooling operation
From the table, the correction coefficient for that horsepower level is found to be 1.00.
From the graph, the base capacity change rate is found to be 92.0%.
92.0% × 1.00 = 92.0% Capacity change rate is 92.0%.
56.0kW × 92.0% = 51.5kW Cooling capacity is 51.5 kW.

● Heating operation
From the table, the correction coefficient for that horsepower level is found to be 1.00.
From the graph, the base capacity change rate is found to be 97.2%.
97.2% × 1.00 = 97.2%
Because the calculation result exceeds 97.2%, the capacity change rate is 97.2%.
63.0kW × 97.2% = 61.2kW Heating capacity is 61.2kW

# 1. Model Selecting and Capacity Calculator

- If the maximum tubing length (L1) exceeds 90 m (equivalent length), increase the tubing size of the main liquid, gas tubes (LM) by one rank.
  However, the upper limit for the gas tube size is ϕ 41.28.
- Increasing the tubing size of the gas tubes can reduce the loss of capacity caused by longer tubing lengths.
  Refer to Table 1 to increase the tubing size. However, the maximum allowable tubing length must not be exceeded.

* The amount of additional refrigerant charge is determined from the liquid tube size only.

**Table 1 Correction coefficient for equivalent length when the size of the gas tube (LM) is increased**

| Standard tube diameter (gas tube, mm) | ø12.7 | ø15.88 | ø19.05 | ø22.22 | ø25.4 | ø28.58 | ø31.75 | ø38.1 |
|---|---|---|---|---|---|---|---|---|
| Tube diameter after change (gas tube, mm) | ø15.88 | ø19.05 | ø22.22 | ø25.4 | ø28.58 | ø31.75 | ø38.1 | ø41.28 |
| Equivalent length correction coefficient | 0.4 | | 0.5 | | | 0.6 | | 0.7 |

* When increasing the size of the suction and discharge tubing (LM), multiply by the correction coefficient from Table 1 and calculate the equivalent length for section LM.

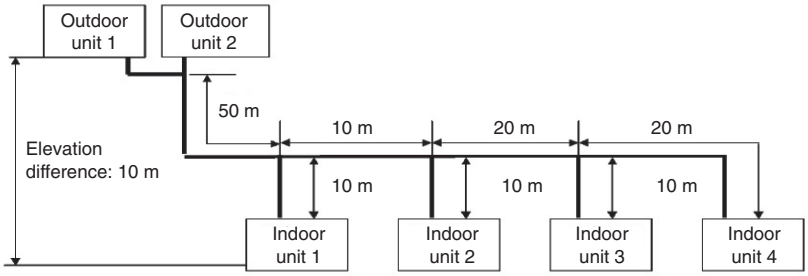
Tubing equivalent length after size increase
= Standard tubing equivalent length × Equivalent length correction coefficient

2

# 2. System Design

## 2-1. System Example

(1) Below are the tables created using the "Sanyo PAC/GHP System Diagram Software." Details of the calculations are shown in (2).




### Selection conditions

Assumes that installation is in a 50 Hz region.

| | | Outdoor unit | Room 1 (indoor unit 1) | Room 2 (indoor unit 2) | Room 3 (indoor unit 3) | Room 4 (indoor unit 4) |
|---|---|---|---|---|---|---|
| Cooling | Air condition (DB/WB) | 33.0 / 22.5 | 26.0 / 18.0 | 26.0 / 18.0 | 26.0 / 18.0 | 26.0 / 18.0 |
| | Max. load (kW) | ——— | 15.0 | 13.0 | 13.0 | 5.5 |
| Heating | Air condition (DB/WB) | 3.0 / 2.0 | 21.0 / 13.0 | 21.0 / 13.0 | 21.0 / 13.0 | 21.0 / 13.0 |
| | Max. load (kW) | ——— | 16.0 | 14.5 | 14.5 | 6.2 |
| Actual tubing length | | 100 m | 60 m | 70 m | 90 m | 100 m |
| Equivalent length (with consideration for curves, etc.) | | 120 m | 72 m | 84 m | 108 m | 120 m |

### Preliminary selection

| | Outdoor unit | Room 1 (indoor unit 1) | Room 2 (indoor unit 2) | Room 3 (indoor unit 3) | Room 4 (indoor unit 4) |
|---|---|---|---|---|---|
| Selected model | Type 1305+0905 | Type 604 | Type 484 | Type 484 | Type 184 |
| Load (cooling/heating) (kW) | ——— | 15.0 | 13.0 | 13.0 | 5.5 |
| Rated capacity (cooling/heating) (kW) | 68.0 / 76.5 | 16.0 / 18.0 | 14.0 / 16.0 | 14.0 / 16.0 | 5.6 / 6.3 |
| (5) Corrected capacity (cooling/ heating) (kW) | 55.3 / 54.86 | 16.00 / 18.00 | 14.00 / 16.00 | 13.42 / 15.69 | 5.23 / 6.07 |
| (7) Actual capacity (cooling/heating) (kW) | ——— | 16.00 / 17.74 | 14.00 / 15.77 | 13.42 / 15.46 | 5.23 / 5.98 |

Total corrected capacity of indoor units (cooling/heating) = 48.65/55.76
Ruc = 48.65/55.3 = 0.880 < 1 Ruh = 55.76/54.86 = 1.164 > 1

### Outdoor unit changes

During heating, the corrected outdoor unit capacity is less than the total corrected capacity of all indoor units in the system. As a result, the actual capacity of each indoor unit is less than the maximum load. Therefore the outdoor unit is increased by one rank.

| | Outdoor unit | Room 1 (indoor unit 1) | Room 2 (indoor unit 2) | Room 3 (indoor unit 3) | Room 4 (indoor unit 4) |
|---|---|---|---|---|---|
| Selected model | Type 1405+0905 | Type 604 | Type 484 | Type 484 | Type 184 |
| Maximum load (cooling/heating) (kW) | ——— | 15.0 | 13.0 | 13.0 | 5.5 |
| Rated capacity (cooling/heating) (kW) | 73.0 / 81.5 | 16.0 / 18.0 | 14.0 / 16.0 | 14.0 / 16.0 | 5.6 / 6.3 |
| (5) Corrected capacity (cooling/ heating) (kW) | 59.36 / 58.45 | 16.00 / 18.00 | 14.00 / 16.00 | 13.42 / 15.69 | 5.23 / 6.07 |
| (7) Actual capacity (cooling/heating) (kW) | ——— | 16.00 / 18.00 | 14.00 / 16.00 | 13.42 / 15.69 | 5.23 / 6.07 |

Total corrected capacity of all indoor units (cooling/heating) = 48.65/55.76
Ruc = 48.65/59.36 = 0.820 < 1 Ruh = 55.76/58.45 = 0.954 < 1

**Indoor unit changes**

The indoor unit in room 4, where the corrected indoor unit capacity is less than the maximum load, is increased by one rank.

| | Outdoor unit | Room 1 (indoor unit 1) | Room 2 (indoor unit 2) | Room 3 (indoor unit 3) | Room 4 (indoor unit 4) |
|---|---|---|---|---|---|
| Selected model | Type 1405+0905 | Type 604 | Type 484 | Type 484 | Type 254 |
| Maximum load (cooling/heating) (kW) | ——— | 15.0 / 16.5 | 13.0 / 14.5 | 13.0 / 14.5 | 5.5 / 6.2 |
| Rated capacity (cooling/heating) (kW) | 73.0 / 81.5 | 16.0 / 18.0 | 14.0 / 16.0 | 14.0 / 16.0 | 7.30 / 8.00 |
| (5) Corrected capacity (cooling/heating) (kW) | 59.36 / 58.45 | 16.00 / 18.00 | 14.00 / 16.00 | 13.42 / 15.69 | 6.82 / 7.71 |
| (7) Actual capacity (cooling/heating) (kW) | ——— | 16.00 / 18.00 | 14.00 / 16.00 | 13.42 / 15.69 | 6.82 / 7.71 |

Total corrected capacity of all indoor units (cooling/heating) = 50.24/57.4
Ruc = 50.24/59.36 = 0.846 < 1 Ruh = 57.4/58.45 = 0.982 < 1

- For both cooling and heating in all rooms, actual capacity is now greater than or equal to the maximum load. Selection is completed.

(2) Calculate the final selection results according to the capacity calculation procedure.

**[From calculation of the correction coefficient to calculation of actual capacity]** (Cooling/heating)

| | | Outdoor unit | Room 1 (indoor unit 1) | Room 2 (indoor unit 2) | Room 3 (indoor unit 3) | Room 4 (indoor unit 4) |
|---|---|---|---|---|---|---|
| Rated capacity (kW) | | 73.0 / 81.5 | 16.0 / 18.0 | 14.0 / 16.0 | 14.0 / 16.0 | 7.30 / 8.00 |
| Correction coefficient | (1) Model | 1.00 / 1.00 | ——— | ——— | ——— | ——— |
| | (2) Temp. condition | 1.019 / 0.941 | 0.934 / 0.964 | 0.934 / 0.964 | 0.934 / 0.964 | 0.934 / 0.964 |
| | (3) Tubing length, elevation difference | 0.798 / 0.856 | 1.105 / 1.070 | 1.079 / 1.052 | 1.026 / 1.018 | 1.00 / 1.00 |
| | (4) Frosting/defrosting | 0.89 | ——— | ——— | ——— | ——— |
| Result of (2) × (3) | | ——— | 1.032 / 1.031 | 1.008 / 1.014 | 0.958 / 0.981 | 0.934 / 0.964 |
| Correction coefficient applied to indoor unit *1 | | ——— | 1.03 / 1.03 | 1.01 / 1.01 | 0.96 / 0.98 | 0.93 / 0.96 |
| (5) Corrected capacity (kW) *2 | | 59.36 / 58.45 | 16.00 / 18.00 | 14.00 / 16.00 | 13.42 / 15.69 | 6.82 / 7.71 |
| (6) Correction coefficient for corrected capacity ratio | | ——— | 1.00 / 1.00 | | | |
| (7) Actual capacity (kW) | | ——— | 16.00 / 18.00 | 14.00 / 16.00 | 13.42 / 15.69 | 6.82 / 7.71 |

*1: This varies depending on the values of (2) and (2) × (Distribution ratio in (3)).
*2: Corrected outdoor unit capacity = Rated outdoor unit capacity × (1) × (2) × (3) × (4)

The actual capacity is calculated as shown below.

Cooling: Ruc = (16.0 + 14.0 + 13.42 + 6.82) / 59.36 = 0.846 < 1
Therefore,
Actual cooling capacity of each indoor unit = Corrected cooling capacity of each indoor unit
(In other words, the correction coefficient (6) for the corrected capacity ratio is 1.)
Heating: Ruh = (18.0 + 16.0 + 15.69 + 7.71) / 58.45 = 0.982 < 1
Therefore,
Actual heating capacity of each indoor unit = Corrected heating capacity of each indoor unit × (0.1 × Ruh + 0.9) / Ruh
(In other words, the correction coefficient (6) for the corrected capacity ratio is (0.1 × Ruh + 0.9) / Ruh.)

(3) Increasing the size of the refrigerant tubing

- Increasing the tubing size of the gas tubes can reduce the loss of capacity caused by longer tubing lengths. Refer to Table 1 to increase the tubing size. However, the maximum allowable tubing length must not be exceeded.

* The amount of additional refrigerant charge is determined from the liquid tube size only.

**Table 1 Correction coefficient for equivalent length when the size of the gas tube (LM) is increased**

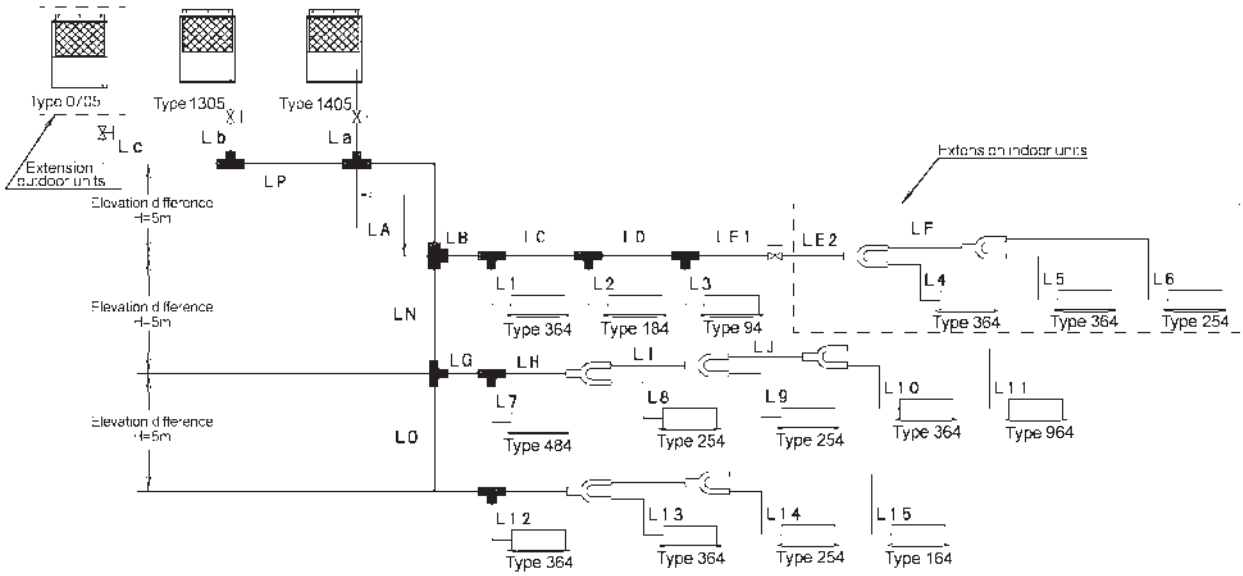
| Standard tube diameter (gas tubes , mm) | ø12.7 | ø15.88 | ø19.05 | ø22.22 | ø25.4 | ø28.58 | ø31.75 | ø38.1 |
|---|---|---|---|---|---|---|---|---|
| Tube diameter after change (gas tubes , mm) | ø15.88 | ø19.05 | ø22.22 | ø25.4 | ø28.58 | ø31.75 | ø38.1 | ø41.28 |
| Equivalent length correction coefficient | 0.4 | | 0.5 | | | 0.6 | | 0.7 |

* When increasing the size of the suction and discharge tubing (LM), multiply by the correction coefficient from Table 1 and calculate the equivalent length for section LM.

Tubing equivalent length after size increase
= Standard tubing equivalent length × Equivalent length correction coefficient

### 2-2. Example of Tubing Size Selection for Extension and Additional Charge Amount

- Sample calculation for the system below



**Additional refrigerant charge before extension**

| | Liquid tube diameter | Tubing length (m) (A) | Additional refrigerant charge per 1 m (kg/m) (B) | (A) × (B) kg |
|---|---|---|---|---|
| La | ø12.7 | 2 | 0.128 | 0.256 |
| Lb | ø12.7 | 1 | 0.128 | 0.128 |
| Lc | ø9.52 | 1 | 0.056 | 0.056 |
| LP | ø15.88 | 20 | 0.185 | 3.700 |
| LA | ø19.05 | 5 | 0.259 | 1.295 |
| LB | ø15.88 | 6 | 0.185 | 1.110 |
| LC | ø12.7 | 6 | 0.128 | 0.768 |
| LD | ø12.7 | 0.4 | 0.128 | 0.051 |
| LE1 | ø9.52 | 5 | 0.056 | 0.280 |
| LN | ø15.88 | 3 | 0.185 | 0.555 |
| LG | ø12.7 | 3 | 0.128 | 0.384 |
| LH | ø9.52 | 4 | 0.056 | 0.224 |
| LI | ø9.52 | 5 | 0.056 | 0.280 |
| LJ | ø9.52 | 5 | 0.056 | 0.280 |
| LK | ø12.7 | 2 | 0.128 | 0.256 |
| LL | ø9.52 | 3 | 0.056 | 0.168 |
| LM | ø9.52 | 4 | 0.056 | 0.224 |
| L1 | ø9.52 | 3 | 0.056 | 0.168 |
| L2 | ø6.35 | 3 | 0.026 | 0.078 |
| L3 | ø6.35 | 3 | 0.026 | 0.078 |
| L7 | ø9.52 | 3 | 0.056 | 0.168 |
| L8 | ø9.52 | 3 | 0.056 | 0.168 |
| L9 | ø9.52 | 4 | 0.056 | 0.224 |
| L10 | ø6.35 | 4 | 0.026 | 0.104 |
| L11 | ø6.35 | 6 | 0.026 | 0.156 |
| L12 | ø9.52 | 4 | 0.056 | 0.224 |
| L13 | ø9.52 | 4 | 0.056 | 0.224 |
| L14 | ø9.52 | 4 | 0.056 | 0.224 |
| L15 | ø6.35 | 6 | 0.026 | 0.156 |
| Total (kg) | | | | 11.987 → 11.99 kg |

**Additional refrigerant charge after extension**

| | Liquid tube diameter | Tubing length (m) (A) | Additional refrigerant charge per 1 m (kg/m) (B) | (A) × (B) kg |
|---|---|---|---|---|
| LE2 | ø9.52 | 4 | 0.056 | 0.224 |
| LF | ø9.52 | 5 | 0.056 | 0.280 |
| L4 | ø9.52 | 4 | 0.056 | 0.224 |
| L5 | ø9.52 | 6 | 0.056 | 0.336 |
| L6 | ø9.52 | 7 | 0.056 | 0.392 |
| Total (kg) | | | | 1.4560 → 1.46 kg |

Calculation of additional refrigerant charge for the entire 2-WAY ECO-i system
(Additional refrigerant charge for entire 2-WAY ECO-i system)
= (Refrigerant charge at outdoor unit) + (Additional refrigerant charge)
= 38 + 13.45 = 51.45 kg (after extension)
[Before extension: 26 + 11.99 = 37.99 kg]

### ■ Checking of limit density

The limit density judgment is made based on the room with the indoor unit having the smallest capacity in the system after extension.
The volume of the room where a type 96 indoor unit is used (connected to tubing L11) is calculated as follows:
floor area 15 $m^2$ × Ceiling height 2.7 m = 40. 5 $m^3$. From the graph below, the minimum room volume for 51.45 kg of refrigerant is 168 $m^3$ (floor area 62 $m^2$). Therefore an opening for ventilation is required.

<Judgment by calculation>

$$\frac{\textbf{Total refrigerant charge for the refrigeration equipment (kg)}}{\textbf{Smallest room volume of all rooms where indoor units are installed } (m^3)} = \frac{51.45\ (kg)}{40.5\ (m^3)} = 1.27\ (kg/m^3) \geq 0.30\ (kg/m^3)$$

In this case, an opening is required for ventilation.

**WARNING** **Always check the gas density limit for the room in which the unit is installed.**

### ■ Check of Limit Density

When installing an air conditioner in a room, it is necessary to ensure that even if the refrigerant gas accidentally leaks out, its density does not exceed the limit level for that room.

If the density could exceed the limit level, it is necessary to provide an opening between the unit and the adjacent room, or to install mechanical ventilation which is interlocked with the leak detector.

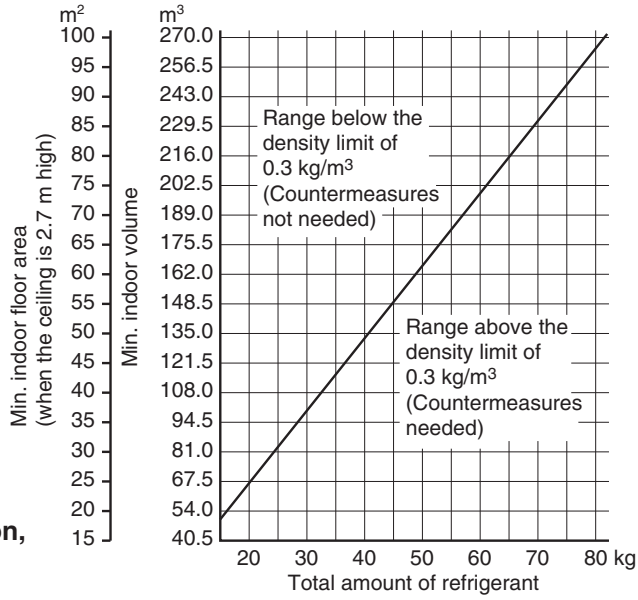
$$\frac{\textbf{(Total refrigerant charged amount: kg)}}{\textbf{(Min. indoor volume where the indoor unit is installed: } m^3\textbf{)}}$$

**< Limit density 0.3 ($kg/m^3$)**
The limit density of refrigerant which is used in this unit is 0.3 $kg/m^3$ (ISO 5149).

The shipped outdoor unit comes charged with the amount of refrigerant fixed for each type, so add it to the amount that is charged in the field. (For the refrigerant charge amount at shipment, refer to the unit's nameplate.)

**CAUTION** **Pay special attention to any location, such as a basement, etc., where leaking refrigerant can accumulate, since refrigerant gas is heavier than air.**

Minimum indoor volume & floor area as against the amount of refrigerant is roughly as given in the following table.



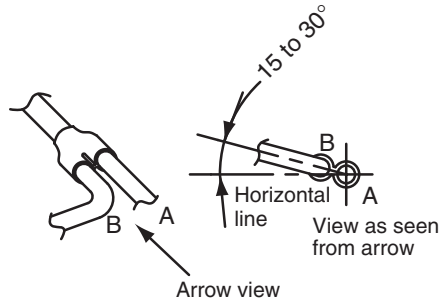
■ Installing distribution joint

(1) Refer to "HOW TO ATTACH DISTRIBUTION JOINT" enclosed with the optional distribution joint kit (APR-CHP680BG, CHP1350BG, P160BG, P680BG, P1350BG).

(2) In order to prevent accumulation of refrigerant oil in stopped units, if the main tubing is horizontal then each branch tubing length should be at an angle that is greater than horizontal. If the main tubing is vertical, provide a raised starting portion for each branch.

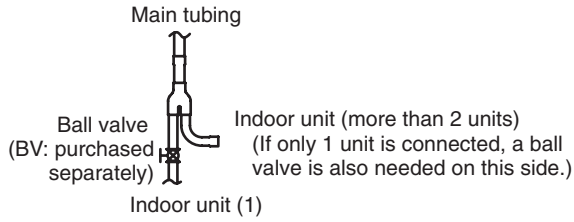
(3) If there are height differences between indoor units or if branch tubing that follows a distribution joint is connected to only 1 unit, a trap or ball valve must be added to that distribution joint. (When adding the ball valve, locate it within 40 cm of the distribution joint.) (Consult with SANYO separately concerning the ball valve.)
**If a trap or ball valve is not added, do not operate the system before repairs to a malfunctioning unit is completed. (The refrigerant oil sent through the tubing to the malfunctioning unit will accumulate and may damage the compressor.)**

**Tube branching methods** (horizontal use)

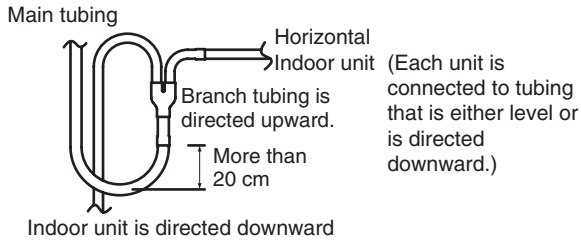



Types of vertical trap specifications

**(When using ball valve)**




**(When not using ball valve)**




2

# 3. Electrical Wiring

## 3-1. General Precautions on Wiring

(1) Before wiring, confirm the rated voltage of the unit as shown on its nameplate, then carry out the wiring closely following the wiring diagram.
(2) Provide a power outlet to be used exclusively for each unit, and a power supply disconnect and circuit breaker for overcurrent protection should be provided in the exclusive line.
(3) To prevent possible hazards from insulation failure, the unit must be grounded.
(4) Each wiring connection must be done in accordance with the wiring system diagram. Wrong wiring may cause the unit to misoperate or become damaged.
(5) Do not allow wiring to touch the refrigerant tubing, compressor, or any moving parts of the fan.
(6) Unauthorized changes in the internal wiring can be very dangerous. The manufacturer will accept no responsibility for any damage or misoperation that occurs as a result of such unauthorized changes.
(7) Regulations on wire diameters differ from locality to locality. For field wiring rules, please refer to your LOCAL ELECTRICAL CODES before beginning.
You must ensure that installation complies with all relevant rules and regulations.
(8) To prevent malfunction of the air conditioner caused by electrical noise, care must be taken when wiring as follows:
- The remote control wiring and the inter-unit control wiring should be wired apart from the inter-unit power wiring.
- Use shielded wires for inter-unit control wiring between units and ground the shield on both sides.

(9) If the power supply cord of this appliance is damaged, it must be replaced by a repair shop appointed by the manufacture, because special purpose tools are required.

## 3-2. Recommended Wire Length and Wire Diameter for Power Supply System Outdoor unit

**Outdoor unit**

| | (A) Power supply | | Time delay fuse or circuit capacity |
|---|---|---|---|
| | Wire size | Max. length | |
| SPW-C0705DXHN8 | 4 mm² | 60 m | 25 A |
| SPW-C0905DXHN8 | 6 mm² | 71 m | 30 A |
| SPW-C1155DXHN8 | 6 mm² | 58 m | 35 A |
| SPW-C1305DXHN8 | 10 mm² | 79 m | 40 A |
| SPW-C1405DXHN8 | 10 mm² | 68 m | 50 A |

or

| (A) Power supply | | Time delay fuse or circuit capacity |
|---|---|---|
| Wire size | Max. length | |
| 4 mm² | 60 m | 25 A |
| 6 mm² | 71 m | 35 A |
| 6 mm² | 58 m | 35 A |
| 10 mm² | 79 m | 50 A |
| 10 mm² | 68 m | 50 A |

**Indoor unit**

| Type | (B) Power supply | Time delay fuse or circuit capacity |
|---|---|---|
| | 2.5 mm² | |
| K | Max. 150 m | 10 – 16A |
| AD, LD, S, X, T, U, F, FM | Max. 130 m | 10 – 16A |
| D (254, 364, 484) | Max. 60 m | 10 – 16A |
| D (764/964) | Max. 50/30 m | 10 – 16A |
| GU055XH | Max. 85 m | 10 – 16A |
| GU075XH | Max. 65 m | 10 – 16A |
| GU105XH | Max. 60 m | 10 – 16A |

**Control wiring**

| (C) Inter-unit (between outdoor and indoor units) control wiring | (D) Remote control wiring | (E) Control wiring for group control |
|---|---|---|
| 0.75 mm² (AWG #18)<br>**Use shielded wiring*** | 0.75 mm² (AWG #18)<br>**Use shielded wiring** | 0.75 mm² (AWG #18)<br>**Use shielded wiring** |
| Max. 1,000 m | Max. 500 m | Max. 500 m (Total) |

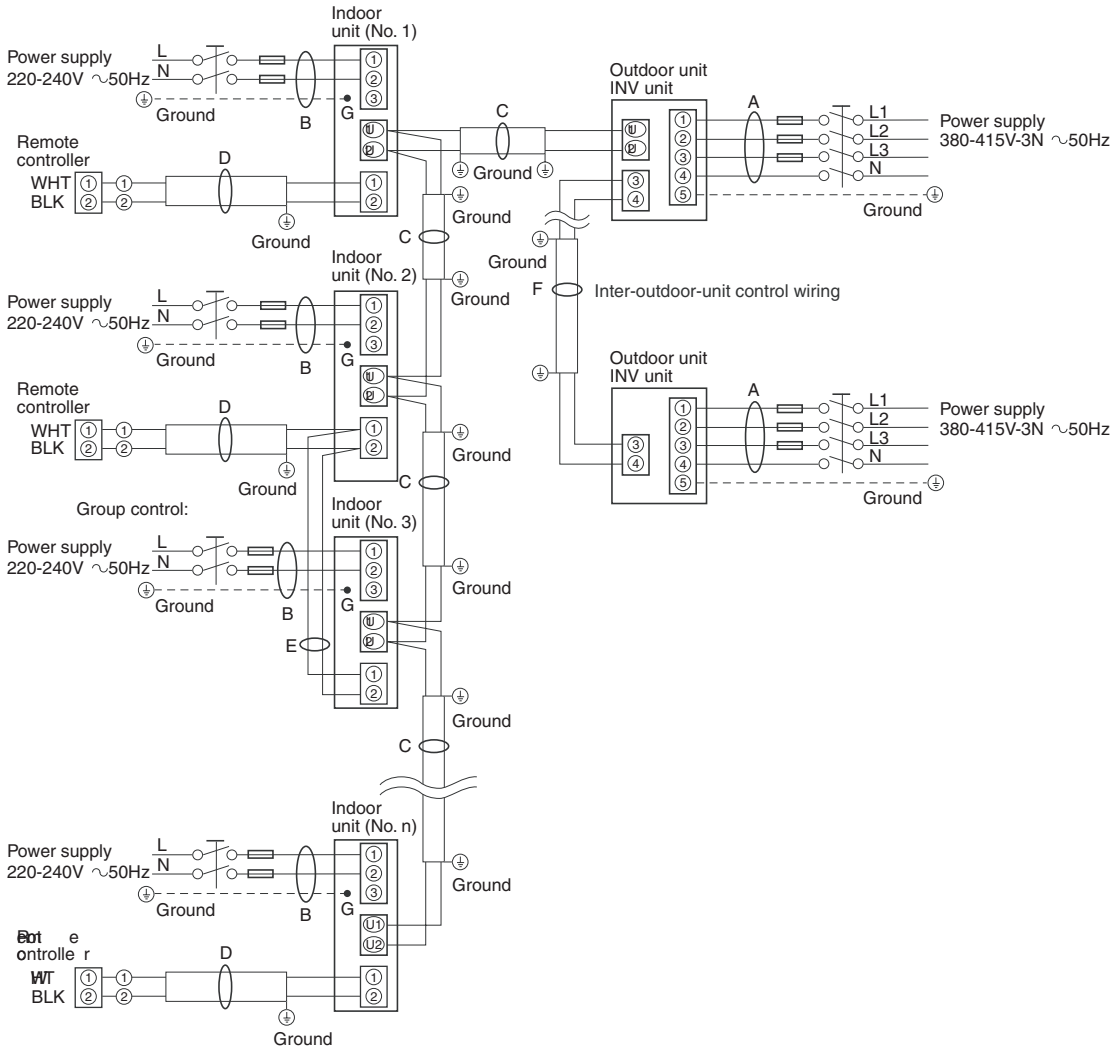
| (F) Inter-outdoor unit control wiring |
|---|
| 0.75 mm² (AWG #18)<br>**Use shielded wiring** |
| Max. 500 m |

**NOTE**

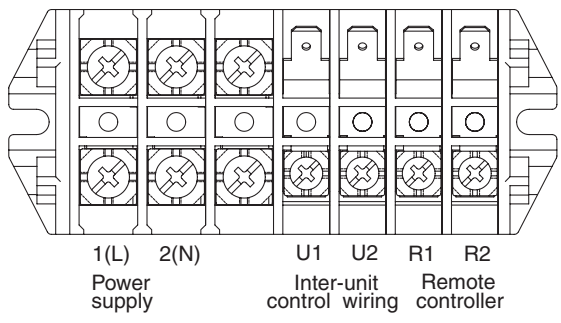
* With ring-type wire terminal.

# 3. Electrical Wiring

## 3-3. Wiring System Diagrams




7P terminal board




**AD, LD, S, X, T Type**

**NOTE**

(1) Refer to Section 3-2. "Recommended Wire Length and Wire Diameter for Power Supply System" for the explanation of "A", "B", "C", "D", "E", and "F" in the above diagram.

(2) The basic connection diagram of the indoor unit shows the 7P terminal board, so the terminal boards in your equipment may differ from the diagram.

(3) Refrigerant Circuit (R.C.) address should be set before turning the power on.

(4) Regarding the R.C. address setting, refer to Section 5. Address setting can be executed by remote controller automatically. Refer to Section 5.

## 3. Electrical Wiring

**CAUTION**

**(1) When linking outdoor units in a network (S-net link system), disconnect the terminal extended from the short plug (CN003, 2P Black, location: right bottom on the outdoor main control PCB) from all outdoor units except any one of the outdoor units.**
**(When shipping: In shorted condition.)**
**Otherwise the communication of S-net link system is not performed. For a system without link (no connection wiring between outdoor units), do not remove the short plug.**

**(2) Do not install the inter-unit control wiring in a way that forms a loop. (Fig. 3-1)**

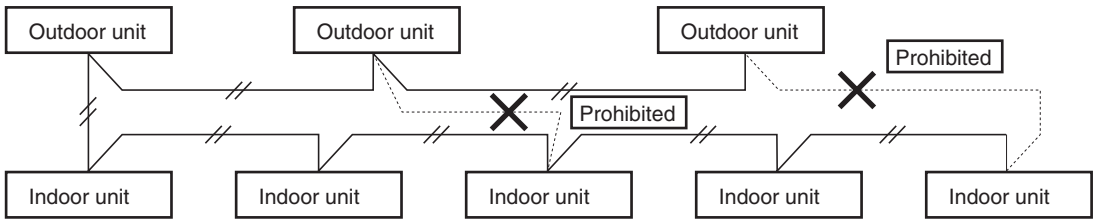



**Fig. 3-1**

**(3) Do not install inter-unit control wiring such as star branch wiring. Star branch wiring causes misaddress setting.**

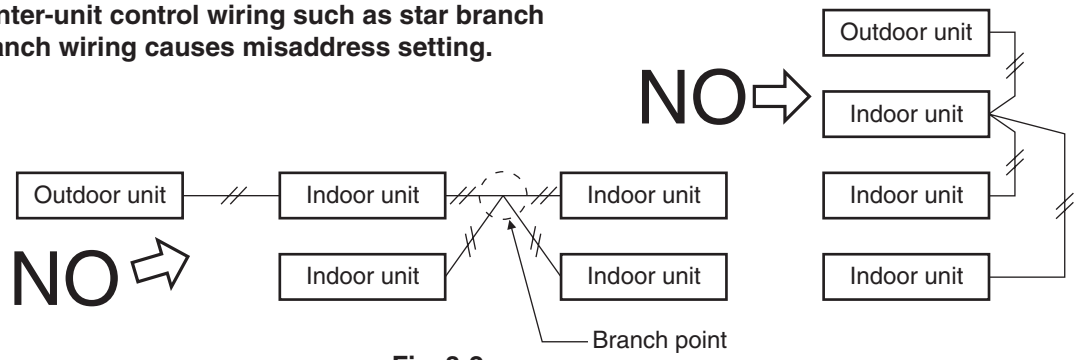



**Fig. 3-2**

**(4) If branching the inter-unit control wiring, the number of branch points should be 16 or fewer. (Branches less than 1 m are not included in the total branch number.) (Fig. 3-3)**

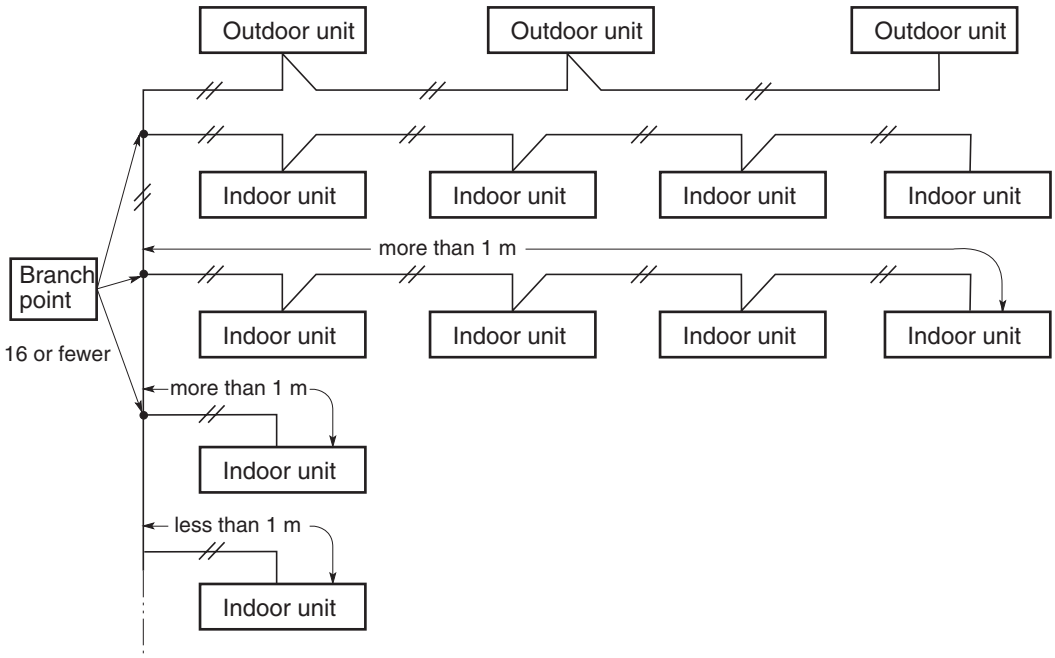



**Fig. 3-3**

# 3. Electrical Wiring

**(5) Use shielded wires for inter-unit control wiring (c) and ground the shield on both sides, otherwise misoperation from noise may occur.(Fig. 3-4) Connect wiring as shown in Section 3-3. "Wiring System Diagrams."**

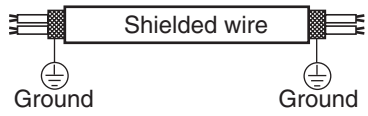



**Fig. 3-4**

**WARNING**

**Loose wiring may cause the terminal to overheat or result in unit malfunction. A fire hazard may also exist. Therefore, ensure that all wiring is tightly connected.**

When connecting each power wire to the terminal, follow the instructions on "How to connect wiring to the terminal" and fasten the wire securely with the fixing screw of the terminal plate.

### How to connect wiring to the terminal

#### ■ For stranded wiring

(1) Cut the wire end with cutting pliers, then strip the insulation to expose the stranded wiring about 10 mm and tightly twist the wire ends.(Fig. 3-5)
(2) Using a Phillips head screwdriver, remove the terminal screw(s) on the terminal plate.
(3) Using a ring connector fastener or pliers, securely clamp each stripped wire end with a ring pressure terminal.
(4) Place the ring pressure terminal, and replace and tighten the removed terminal screw using a screwdriver. (Fig. 3-6)

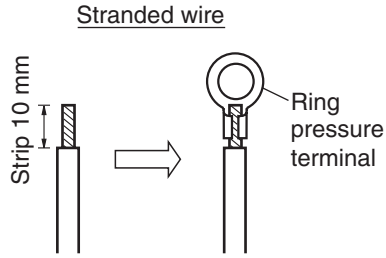



**Fig. 3-5**

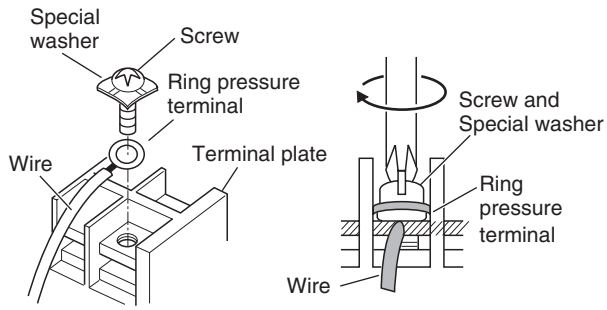



**Fig. 3-6**

# 4. Installation Instructions

## 4-1. Outdoor Unit

**AVOID:**

- heat sources, exhaust fans, etc.
- damp, humid or uneven locations
- indoors (no-ventilation location)

**DO:**

- choose a place as cool as possible.
- choose a place that is well ventilated.
- select a location where tubing and drain pipe have the shortest run to the outdoor unit.
- allow enough room around the unit for air intake/exhaust and possible maintenance.

### Installation Space

Install the outdoor unit where there is enough space for ventilation. Otherwise the unit may not operate properly. Fig. 4-2 shows the minimum space requirement around the outdoor units when 3 sides are open and only 1 side is shuttered, with open space above the unit. The mounting base should be concrete or a similar material that allows for adequate drainage. Make provisions for anchor bolts, platform height, and other site-specific installation requirements.

**CAUTION**

- **Leave space open above the unit.**
- **Construct louvers or other openings in the wall, if necessary, to ensure adequate ventilation.**

**NOTE**

- Do not do any wiring or tubing within 30 cm of the front panel, because this space is needed as a servicing space for the compressor.
- Ensure a base height of 100 mm or more to ensure that drainage water does not accumulate and freeze around the bottom of the unit.
- If installing a drain pan, install the drain pan prior to installing the outdoor unit.

* Make sure there is at least 150 mm between the outdoor unit and the ground.
Also, the direction of the tubing and electrical wiring should be from the front of the outdoor unit.

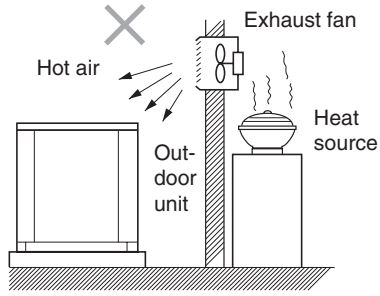
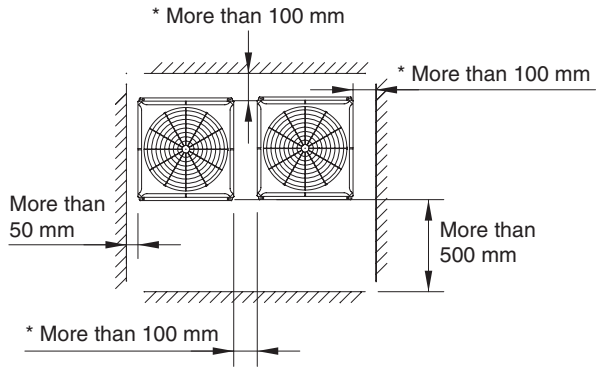


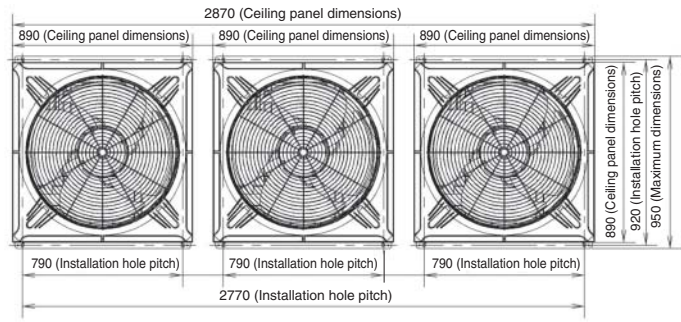

**Fig. 4-1**

Example of installation of 2 units
(When wall height is below 1800 mm)




* However, be sure to ensure a space of 300 mm or more at either the right side or the rear of the unit.

**Fig. 4-2**




Top view

**Fig. 4-3**

2

# 4. Installation Instructions



### 4-2. Shield for Horizontal Exhaust Discharge

It is necessary to install an air-discharge chamber (field supply) to direct exhaust from the fan horizontally if it is difficult to provide a minimum space of 2 m between the air-discharge outlet and a nearby obstacle. (Fig. 4-4)

**CAUTION**

**In regions with heavy snowfall, the outdoor unit should be provided with a solid, raised platform and snow-proof vents.(Fig. 4-5)**

### 4-3. Installing the Outdoor Unit in Heavy Snow Areas

In locations where wind-blown snow can be a problem, snow-proof vents should be fitted to the unit and direct exposure to the wind should be avoided as much as possible. (Fig. 4-6)
The following problems may occur if proper countermeasures are not taken:

- The fan in the outdoor unit may stop running, causing the unit to be damaged.
- There may be no air flow.
- The tubing may freeze and burst.
- The condenser pressure may drop because of strong wind, and the indoor unit may freeze.

### 4-4. Precautions When Installing in Heavy Snow Areas

a) The platform should be higher than the maximum snow depth. (Fig. 4-5)
b) The 2 anchoring feet of the outdoor unit should be used for the platform, and the platform should be installed beneath the air-intake side of the outdoor unit.
c) The platform foundation must be solid and the unit must be secured with anchor bolts.
d) When installing on a roof subject to strong wind, countermeasures must be taken to prevent the unit from being overturned.

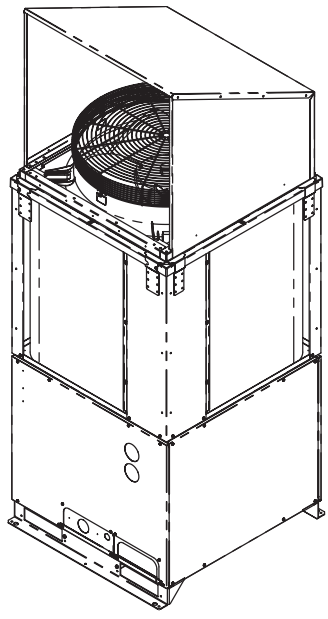


**Fig. 4-4**

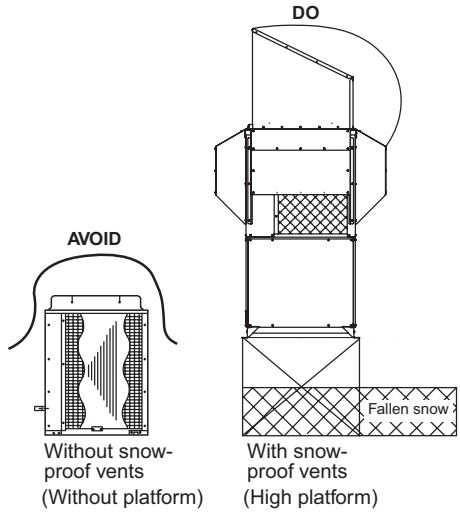



**Fig. 4-5**

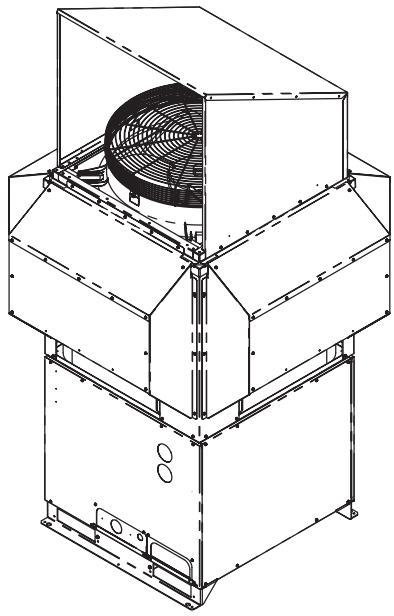


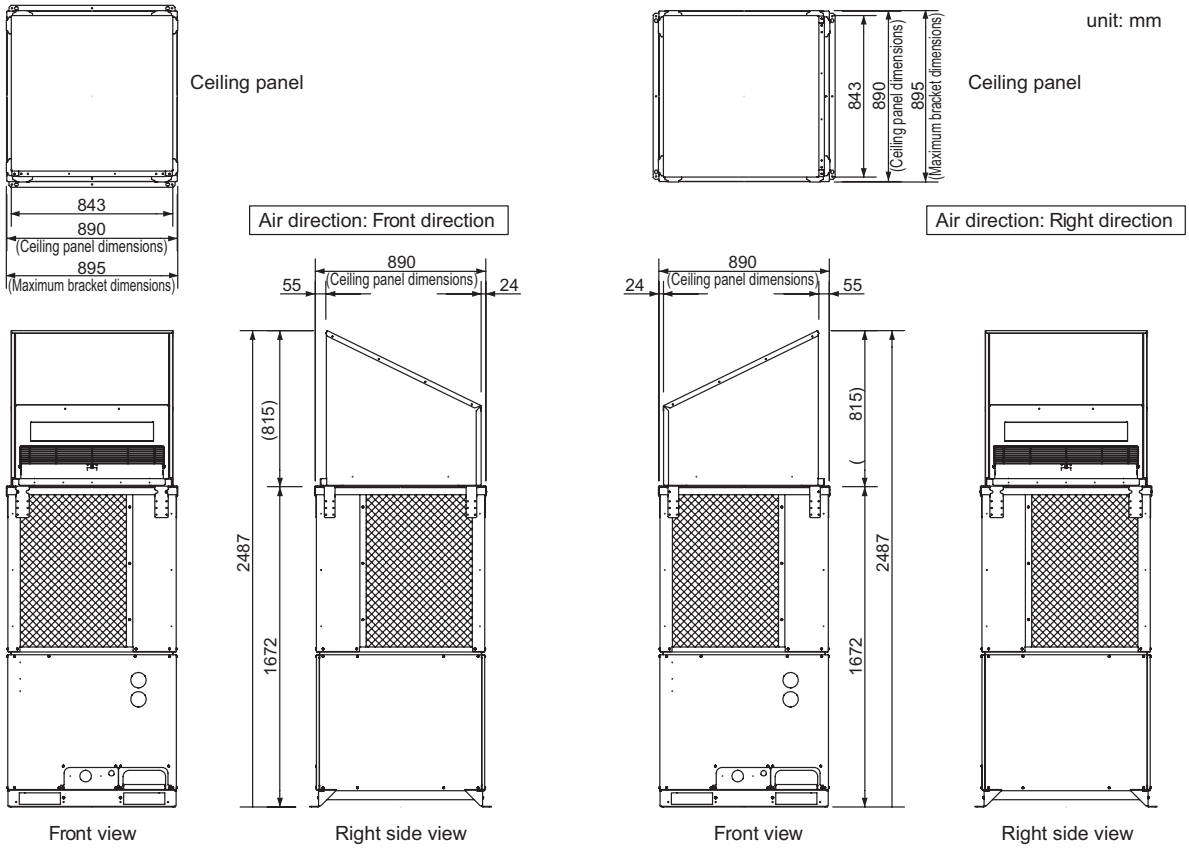
**Fig. 4-6**

# 4. Installation Instructions

## 4-5. Dimensions of Wind Ducting

### Reference diagram for air-discharge chamber (field supply)

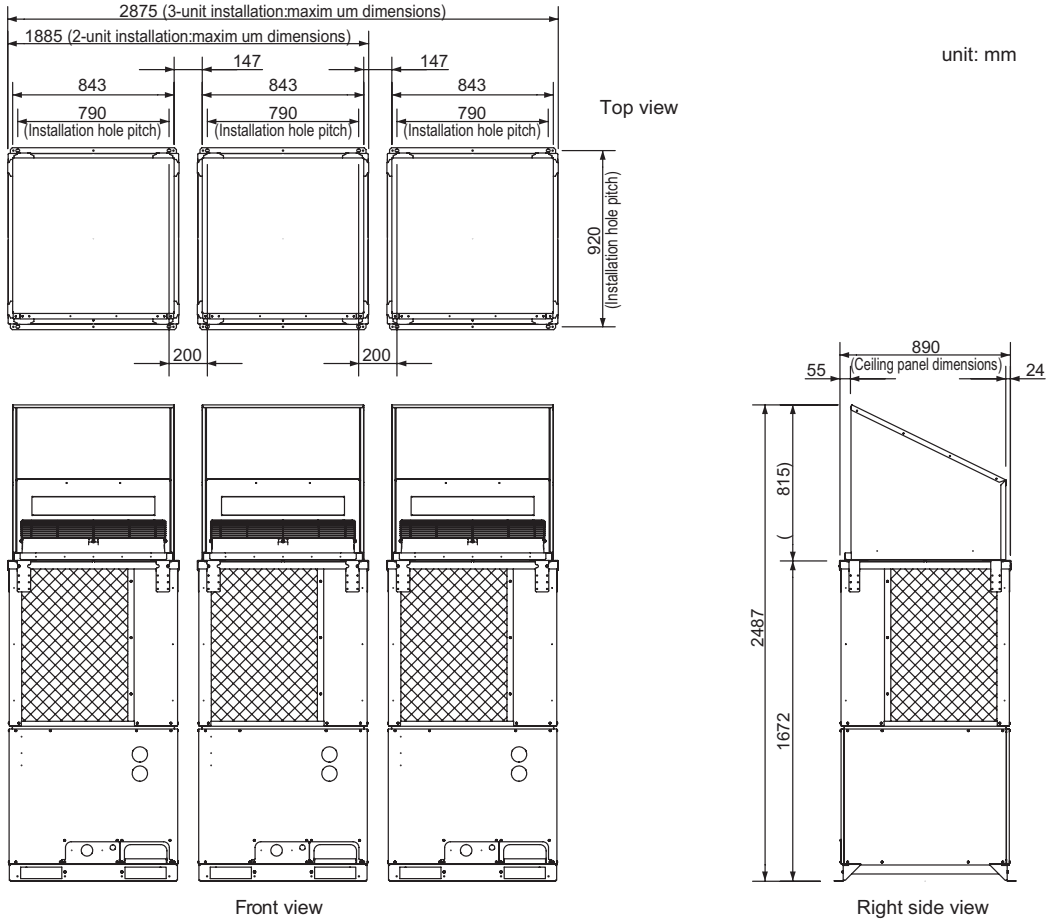
unit: mm




**Note:** Can be installed so that the air direction is to the front or rear direction.

### 3-unit installation

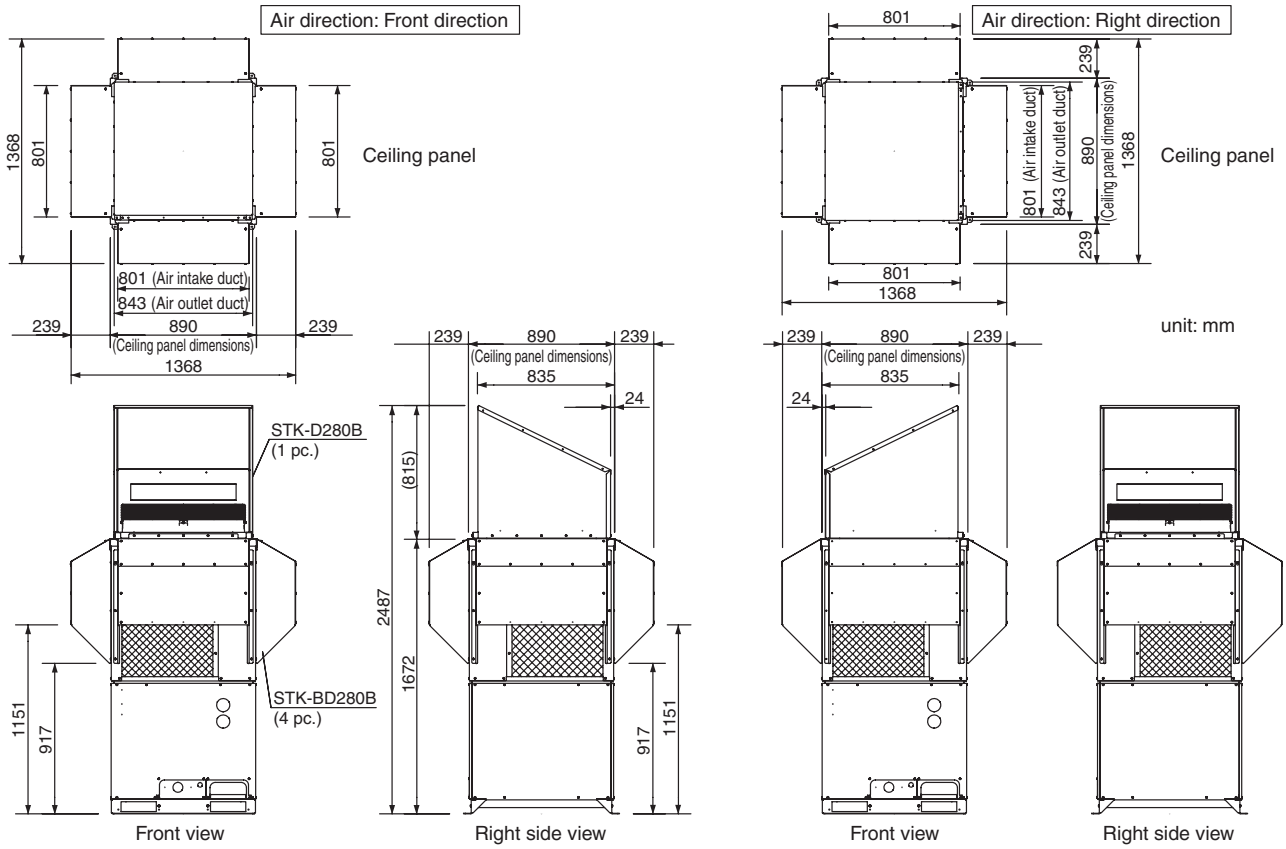
unit: mm



# 4. Installation Instructions

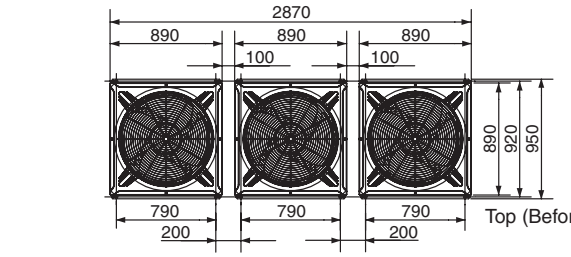
## 4-6. Dimensions of Wind Ducting

### Reference diagram for air-discharge chamber (field supply)

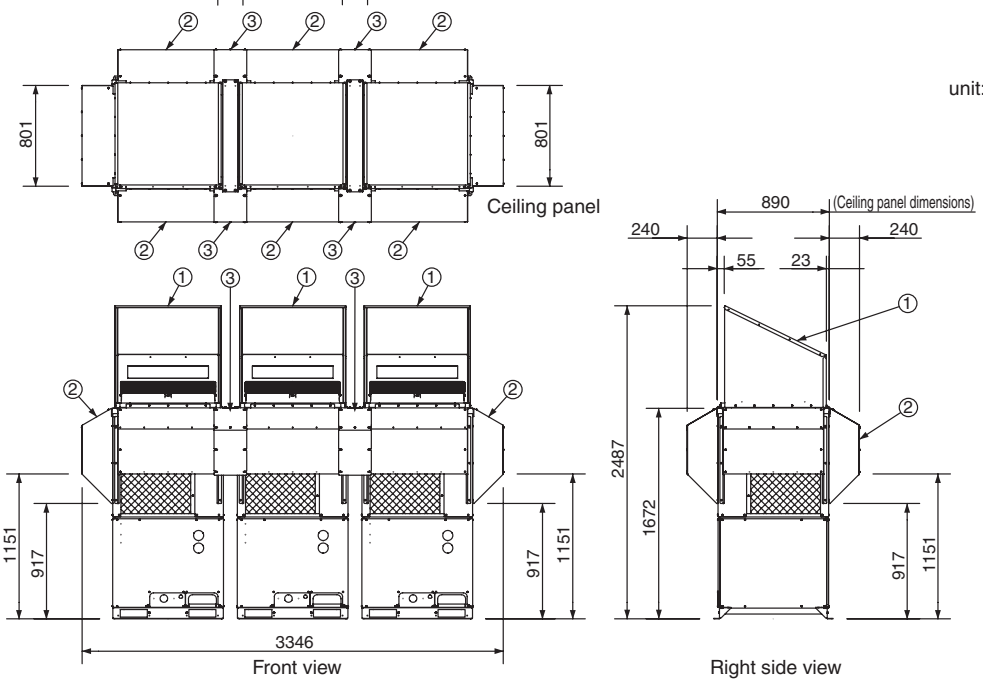



**Note:** Can be installed so that the air direction is to the front or rear direction.

### 3-unit installation




| | Part name | No. | Q'ty for 2 units | Q'ty for 3 units |
|---|---|---|---|---|
| ① | Air direction chamber | STK-D280B | 2 | 3 |
| ② | Snow ducting | STK-BD280B | 6 | 8 |
| ③ | Spacer | STK-BDB | 1 | 2 |



# 4. Installation Instructions

## 4-7. Optional Distribution Joint Kits

See the installation instructions packaged with the distribution joint kit for the installation procedure.

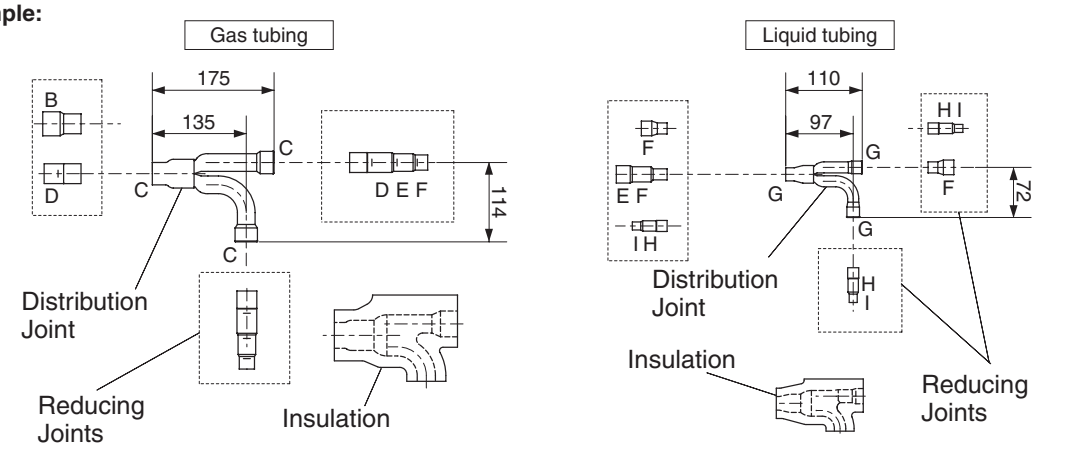
| Model name | Cooling capacity after distribution | Remarks |
|---|---|---|
| 1. APR-CHP680BG | 68.0 kW or less | For outdoor unit |
| 2. APR-CHP1350BG | 135.0 kW or less | For outdoor unit |
| 3. APR-P160BG | 22.4 kW or less | For indoor unit |
| 4. APR-P680BG | 68.0 kW or less | For indoor unit |
| 5. APR-P1350BG | 135.0 kW or less | For indoor unit |

■ **Tubing size (with thermal insulation)**

1. APR-CHP680BG

For outdoor unit (Capacity after distribution joint is 68.0 kW or less.)

**Example:**




Unit: mm

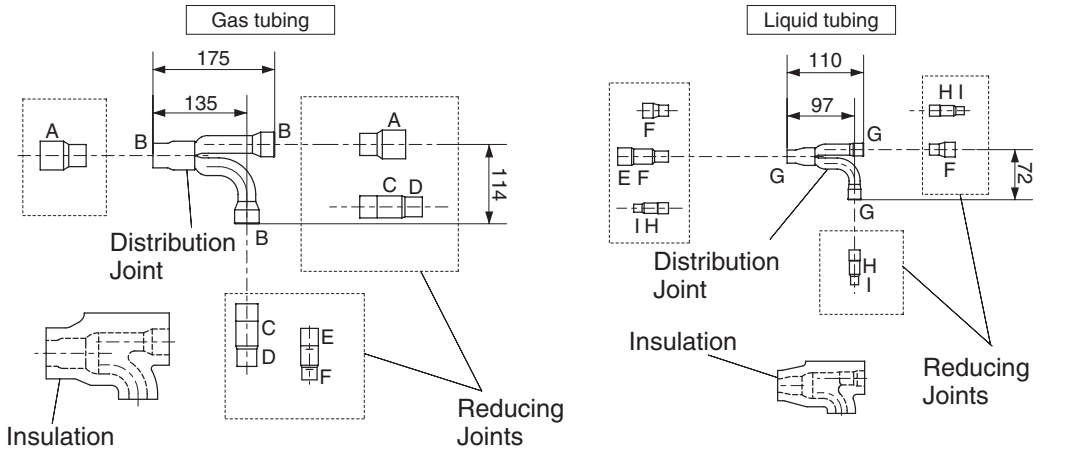
**Size of connection point on each part (Shown are inside diameters of tubing)**

| Size | Part A | Part B | Part C | Part D | Part E | Part F | Part G | Part H | Part I |
|---|---|---|---|---|---|---|---|---|---|
| mm | ø38.1 | ø31.75 | ø28.58 | ø25.4 | ø22.22 | ø19.05 | ø15.88 | ø12.7 | ø9.52 |

2. APR-CHP1350BG

For outdoor unit (Capacity after distribution joint is greater than 68.0 kW and no more than 135.0 kW.)

**Example:**




Unit: mm

**Size of connection point on each part (Shown are inside diameters of tubing)**

| Size | Part A | Part B | Part C | Part D | Part E | Part F | Part G | Part H | Part I |
|---|---|---|---|---|---|---|---|---|---|
| mm | ø38.1 | ø31.75 | ø28.58 | ø25.4 | ø22.22 | ø19.05 | ø15.88 | ø12.7 | ø9.52 |

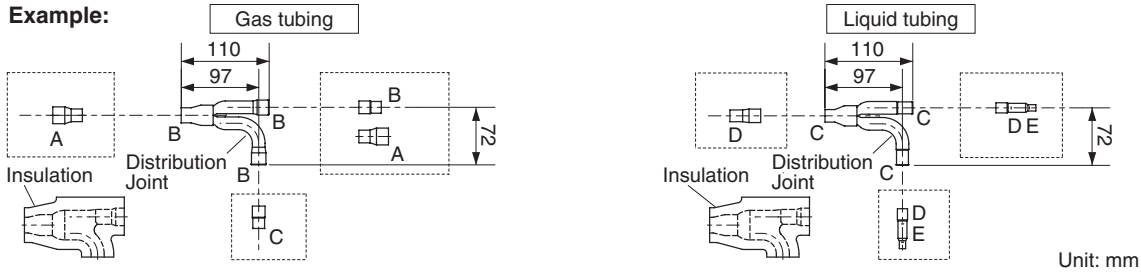
# 4. Installation Instructions



3. APR-P160BG

Use: For indoor unit (Capacity after distribution joint is 22.4 kW or less.)

**Example:**




Unit: mm

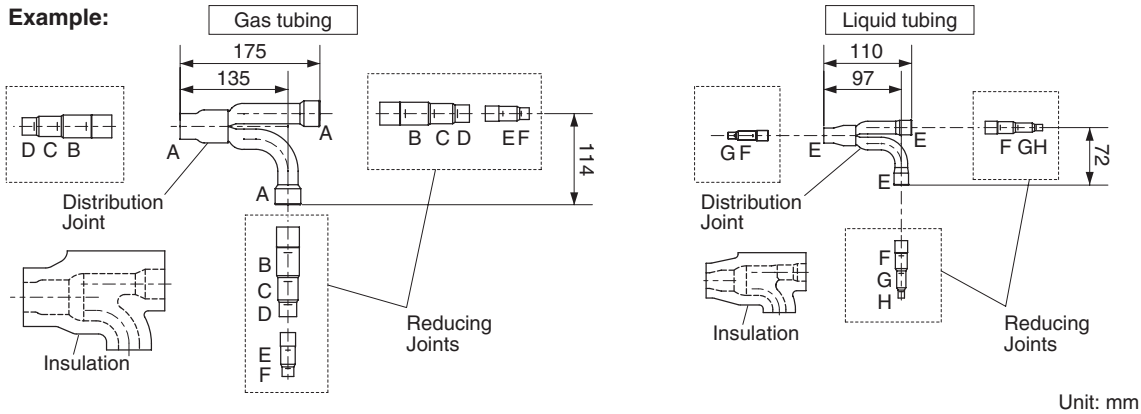
**Size of connection point on each part (Shown are inside diameters of tubing)**

| Size | Part A | Part B | Part C | Part D | Part E |
|---|---|---|---|---|---|
| mm | ø19.05 | ø15.88 | ø12.7 | ø9.52 | ø6.35 |

4. APR-P680BG

Use: For indoor unit (Capacity after distribution joint is greater than 22.4 kW and no more than 68.0 kW.)

**Example:**




Unit: mm

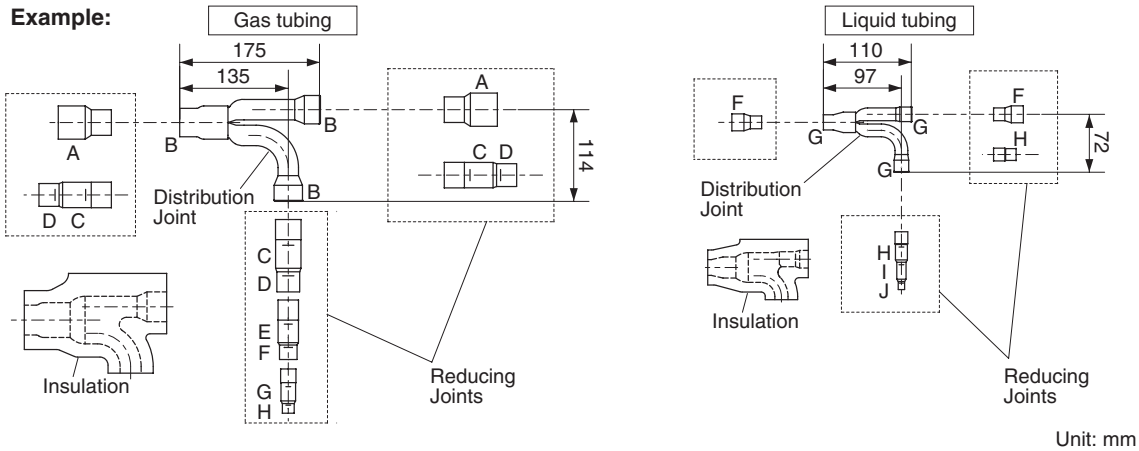
**Size of connection point on each part (Shown are inside diameters of tubing)**

| Size | Part A | Part B | Part C | Part D | Part E | Part F | Part G | Part H |
|---|---|---|---|---|---|---|---|---|
| mm | ø28.58 | ø25.4 | ø22.22 | ø19.05 | ø15.88 | ø12.7 | ø9.52 | ø6.35 |

5. APR-P1350BG

Use: For indoor unit (Capacity after distribution joint is greater than 68.0 kW and no more than 135.0 kW.)

**Example:**




Unit: mm

**Size of connection point on each part (Shown are inside diameters of tubing)**

| Size | Part A | Part B | Part C | Part D | Part E | Part F | Part G | Part H | Part I | Part J |
|---|---|---|---|---|---|---|---|---|---|---|
| mm | ø38.1 | ø31.75 | ø28.58 | ø25.4 | ø22.22 | ø19.05 | ø15.88 | ø12.7 | ø9.52 | ø6.35 |

# 4. Installation Instructions

## 4-8. Transporting the Outdoor Unit

When transporting the unit, have it delivered as close to the installation site as possible without unpacking.
Use a hook for suspending the unit. (Fig. 4-7)

**CAUTION**

- When hoisting the outdoor unit, pass ropes or straps under the bottom plate as shown in the figure at right. When hoisting, the angle between the rope and top panel must be 70° or greater so that the rope does not come into contact with the fan guard.

  (Use 2 lengths of rope 7.5 meters long or longer.)
- When passing the ropes through the square holes of the bottom plate:

  Place the rope in the outer edge of the square holes.
- Use protective panels or padding at all locations where the rope contacts the outer casing or other parts to prevent scratching. In particular, use protective material (such as cloth or cardboard) to prevent the edges of the top panel from being scratched.
- Be careful of the fan.

  There is danger of injury if the fan starts to turn during inspection. Be sure to turn OFF the remote power switch before beginning inspection.

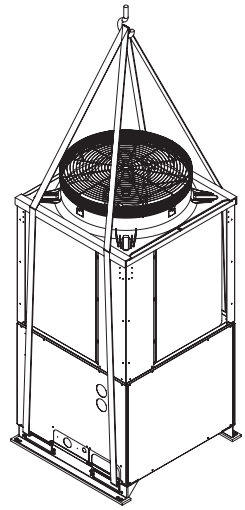
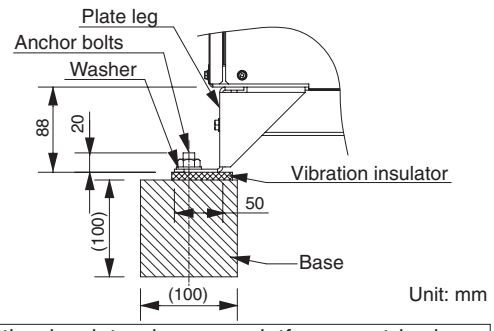


**Fig. 4-7**

## 4-9. Installing the Outdoor Unit

(1) Use anchor bolts (M12) or similar to securely anchor the unit in place. (Fig. 4-8)
(2) Be sure the rubber vibration insulator and platform extend to the inside of the legs. In addition, the washers used to anchor the unit from the top must be larger than the installation anchor holes. (Figs. 4-8 and 4-9)




The vibration insulator, base, or platform must be large enough to bear the full surface of the base plate legs.

**Fig. 4-8**

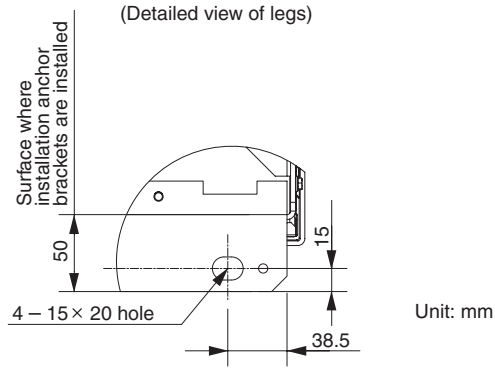
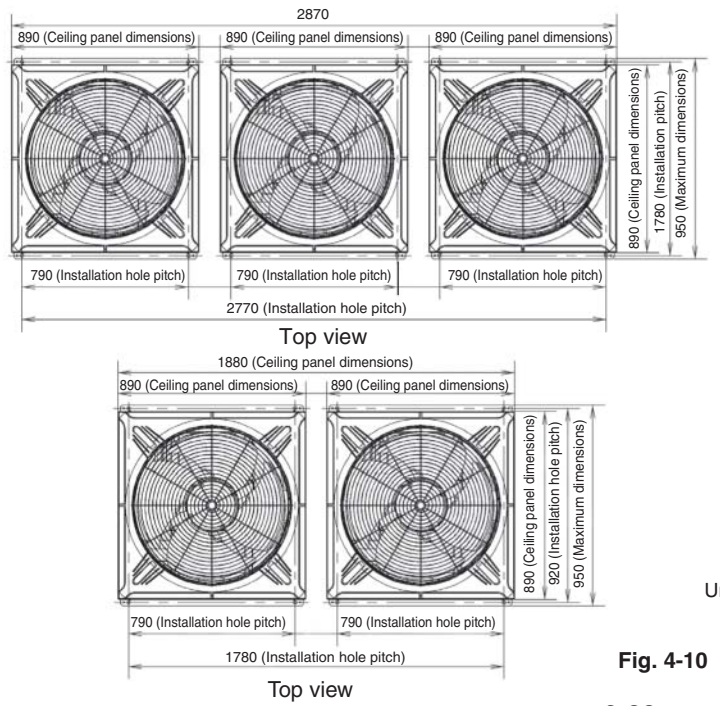



**Fig. 4-9**



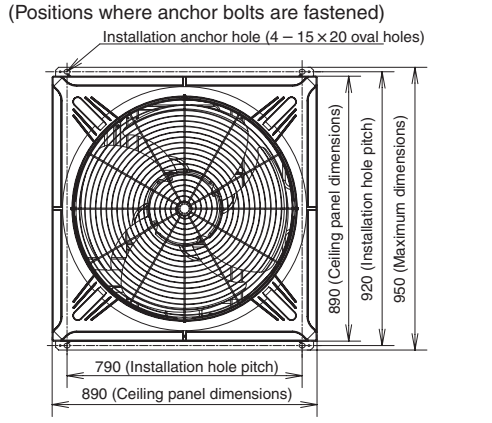




**Fig. 4-10**

# 4. Installation Instructions

## 4-10. Routing the Tubing

- The tubing can be routed out either from the front or from the bottom. (Fig. 4-12)
- The connecting valve is contained inside the unit. Therefore, remove the front panel. (Fig. 4-12)

(1) If the tubing is routed out from the front, use cutting pliers or a similar tool to cut out the tubing outlet slit (part indicated by ▨) from the tubing cover. (Figs. 4-11 and 4-12)

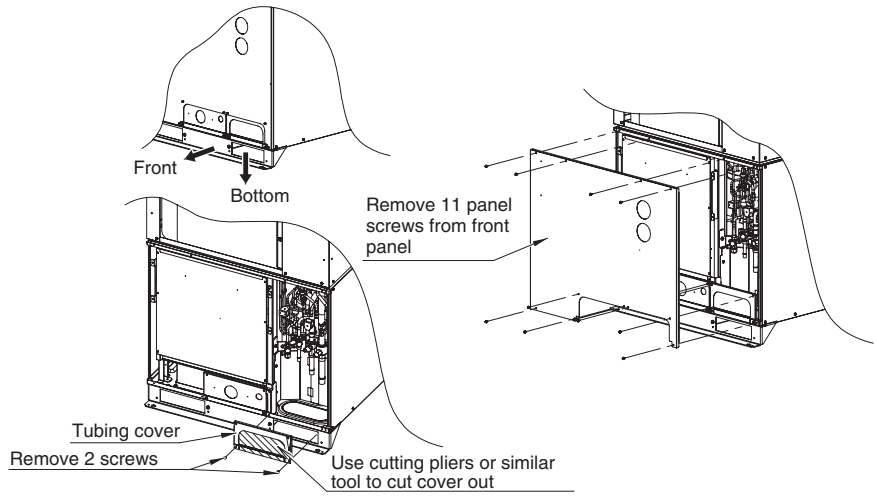



**Fig. 4-11**



(2) If the tubing is routed out from the bottom, remove the slit part ( ▨ ).

- Use a drill bit approximately 5 mm dia. to create holes at the 4 slit hole indentations (openings).
- Punch out the slit part ( ▨ ).
- Be careful not to damage the base plate.

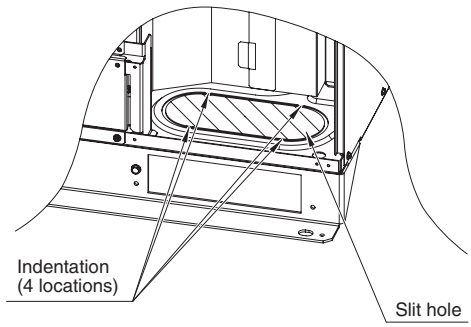



**Fig. 4-12**

# 4. Installation Instructions

## 4-11. Prepare the Tubing

- Material: Use C1220 phosphorous deoxidized copper as described in JIS H3300, "Copper and Copper Alloy Seamless Pipes and Tubes." (For tubes that are ø22.22 or larger, use 1/2H material or H material. For all others use O material.)
- Tubing size

  Use the tubing size indicated in the table below.
- When cutting the tubing, use a tube cutter, and be sure to remove any burrs. (The same applies to distribution tubing (optional).)
- When bending the tubes, bend each tube using a radius that is at least 4 times the outer diameter of the tube.

  When bending, use sufficient care to avoid crushing or damaging the tube
- For flaring, use a flare tool, and be sure that flaring is performed correctly.

**CAUTION**

**Use sufficient caution during preparation of the tubing. Seal the tube ends by means of caps or taping to prevent dust, moisture, or other foreign substances from entering the tubes.**

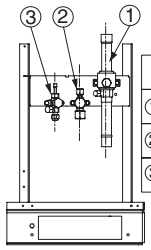
**Refrigerant tubing (Existing tubing can be used.)**

| Tubing size (mm) | | | |
|---|---|---|---|
| **Outer dia.** | **Thickness** | **Outer dia.** | **Thickness** |
| ø6.35 | t0.8 | ø22.22 | t1.0 |
| ø9.52 | t0.8 | ø25.4 | t1.0 |
| ø12.7 | t0.8 | ø28.58 | t1.0 |
| ø15.88 | t1.0 | ø31.8 | t1.1 |
| ø19.05 | over t1.0 | ø38.1 | over t1.15 |
| | | ø41.28 | t1.2 |

## 4-12. Connect the Tubing

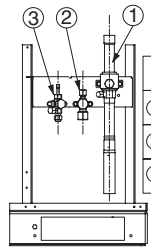
- Except for 0705 and 1305 types, use the supplied connector tubing. (See figure below.)

0705 type (8 hp)



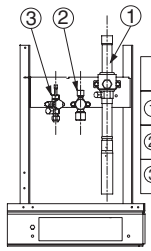

| | Refrigerant tubing | Connection method | Supplied parts used? |
|---|---|---|---|
| ① | Gas tubing | Brazing | No |
| ② | Liquid tubing | Flare connection | No |
| ③ | Balance tube | Flare connection | No |

0905 type (10 hp)



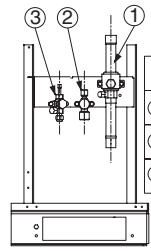

| | Refrigerant tubing | Connection method | Supplied parts used? |
|---|---|---|---|
| ① | Gas tubing | Brazing | Yes (ø19.05→ø22.22) |
| ② | Liquid tubing | Flare connection | No |
| ③ | Balance tube | Flare connection | No |

1155 type (12 hp)



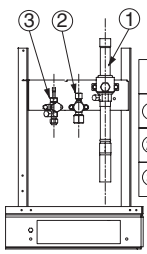

| | Refrigerant tubing | Connection method | Supplied parts used? |
|---|---|---|---|
| ① | Gas tubing | Brazing | Yes (ø19.05→ø25.4) |
| ② | Liquid tubing | Flare connection | No |
| ③ | Balance tube | Flare connection | No |

1305 type (14 hp)




| | Refrigerant tubing | Connection method | Supplied parts used? |
|---|---|---|---|
| ① | Gas tubing | Brazing | No |
| ② | Liquid tubing | Flare connection | No |
| ③ | Balance tube | Flare connection | No |

1405 type (16 hp)

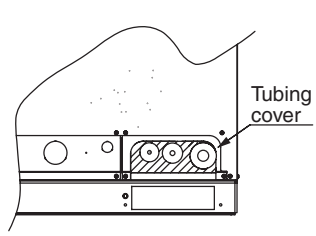



| | Refrigerant tubing | Connection method | Supplied parts used? |
|---|---|---|---|
| ① | Gas tubing | Brazing | Yes (ø25.4→ø28.58) |
| ② | Liquid tubing | Flare connection | No |
| ③ | Balance tube | Flare connection | No |

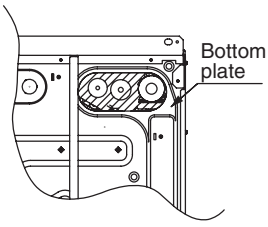
# 4. Installation Instructions

### Refrigerant tube port

- Use caulking, putty, or a similar material to fill any gaps at the refrigerant tube port ( ▨ ) in order to prevent rainwater, dust or foreign substances from entering the unit.
  * Perform this work even if the tubing is routed out in a downward direction.
- Tighten each cap as specified below.




Tubing routed out through the front side




Tubing routed out through the bottom

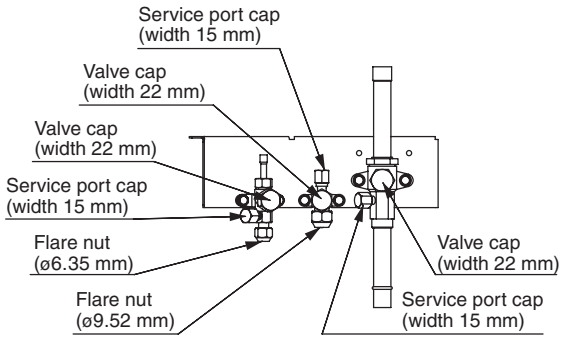
### Tightening torque for each cap

**Cap tightening torque**

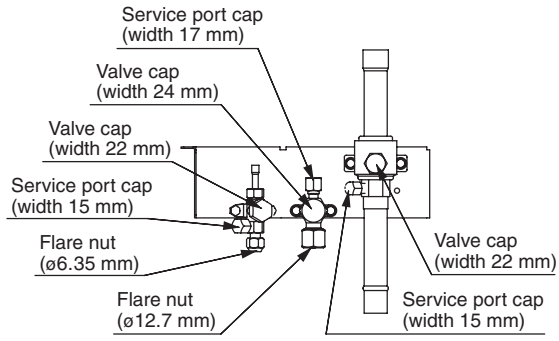
| | |
|---|---|
| Service port cap (width 15 mm, 17 mm) | 7 –12 N · m (70 – 120 kgf · cm) |
| Valve cap (width 22 mm, 24 mm) | 20 –25 N · m (200 – 250 kgf · cm) |

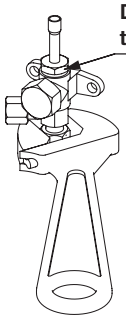
* Be careful of the cap sizes. The sizes of the service port cap and valve cap on the 1155 – 1405 type liquid tube valves are different from other valve caps.

**(0705 • 0905 Type)**



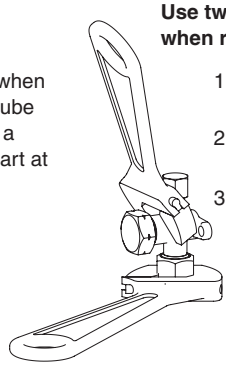

**(1155 • 1305 • 1405 Type)**



**Do not apply a monkey wrench to the hexagonal part.**

Do not use two monkey wrenches when removing or installing the balance tube flare nut. In particular, do not apply a monkey wrench to the hexagonal part at the top of the valve.
(If force is applied to this part, gas leakage will occur.)



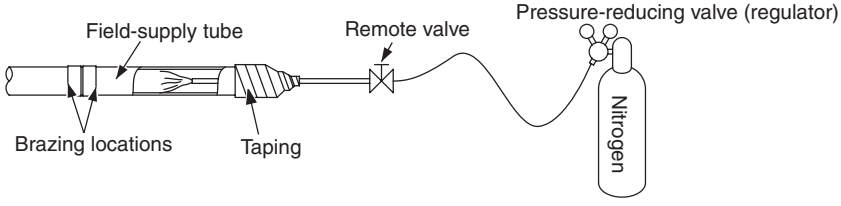
**Use two monkey wrenches, as shown in the figure, when removing the liquid tube valve flare nut.**

1. Do not apply a wrench to the valve cap when removing or installing the flare nuts. Doing so may damage the valve.
2. If the valve cap is left off for a long period of time, refrigerant leakage will occur. Therefore, do not leave the valve cap off.
3. Applying refrigerant oil to the flare surface can be effective in preventing gas leakage, however be sure to use a refrigerant oil which is suitable for the refrigerant that is used in the system. (This unit utilizes R410A refrigerant, and the refrigerant oil is ether oil (synthetic oil). However, hub oil (synthetic oil) can also be used.)

- Precautions for brazing

  Be sure to replace the air inside the tube with nitrogen to prevent oxide film from forming during the brazing process. Be sure to use a damp cloth or other means to cool the valve unit during brazing.

**Work method**




**CAUTION**

1. Be sure to use nitrogen. (Oxygen, $CO^2$, and CFC must not be used.)
2. Use a pressure-reducing valve on the nitrogen tank.
3. Do not use agents intended to prevent the formation of oxide film. They will adversely affect the refrigeration oil, and may cause equipment failure.
4. The balance tube is not used if only 1 outdoor unit is installed. Use the unit in the same conditions as when it was shipped from the factory.

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# 1. Main Operating Functions

## 1-1. Room Temperature Control

The thermostat is turned ON/OFF according to ▲ as shown below.

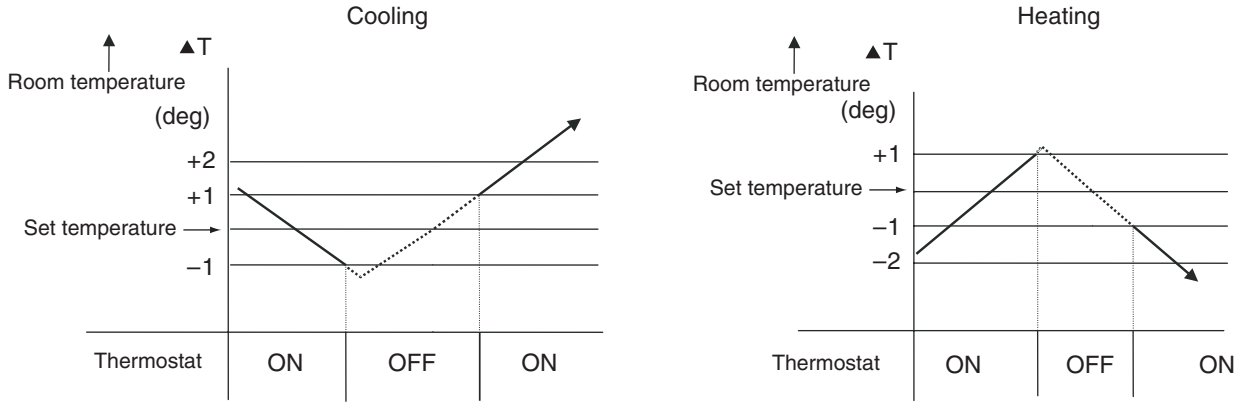
| ▲T = Room temperature - Set temperature | |
|---|---|
| When remote controller sensor is used | Room temperature = Temperature detected by the remote controller sensor |
| When body sensor is used | Room temperature = Temperature detected by the body sensor - Intake shift temperature* |

* Intake shift temperature (enabled only during heating)

During heating, a difference in temperature occurs between the top and bottom of a room. This value is set in consideration for the difference between the temperature detected by the body sensor and the temperature at the bottom of the room.

<Value set for intake shift temperature at time of shipment>: 4°C

**Note:** The shift temperature can be selected in the range of 0 – 10°C, by using the remote controller simplified setting mode.




(1) After the thermostat turns ON, it will not turn OFF again as a result of ▲ for 5 minutes.

(2) After the thermostat turns OFF, it will not turn ON again for 3 minutes. (It also will not turn ON for 3 minutes after the power is switched ON.)

(3) The compressor turns OFF if the mode is changed cooling → heating (or heating → cooling) while the compressor is ON.

(4) If "test run" mode is selected, the thermostat will not turn OFF as a result of ▲ for 60 minutes. (The thermostat is forced ON.)

# 1. Main Operating Functions

## 1-2. Automatic Control for Heating and Cooling

### Automatic Heating/Cooling Control

(1) When operation starts, heating or cooling is selected according to the set temperature and the room temperature.
- Room temperature ≥ Set temperature + 1 → Cooling
- Set temperature – 1 < Room temperature ≤ Set temperature + 1 → Monitoring mode (*1)
- Room temperature < Set temperature – 1 → Heating

*1: If the difference between the room temperature and set temperature is small when operation starts, the cooling thermostat remains in standby status (OFF) until the temperature difference increases. When the temperature difference increases, either cooling operation or heating operation is selected. This standby status is known as "monitoring mode."

(2) After operation starts in the selected operating mode, the set temperature is automatically shifted by +2°C (cooling operation) or –2°C (heating operation).

Example: Temperature set on the remote controller is 20°C.

| | Selected operating mode | Shifted set temp. | Remote controller display |
|---|---|---|---|
| 1 | Cooling | 22°C | 20°C |
| 2 | Heating | 18°C | 20°C |

(3) Operating mode changes (heating → cooling, cooling → heating) which occur during operation as a result of temperature changes are handled as shown below.
- Heating → cooling: Room temperature → Shifted set temperature (set temperature + 2°C) + 0.5°C
- Cooling → heating: Room temperature → Shifted set temperature (set temperature – 2°C) – 1.0°C

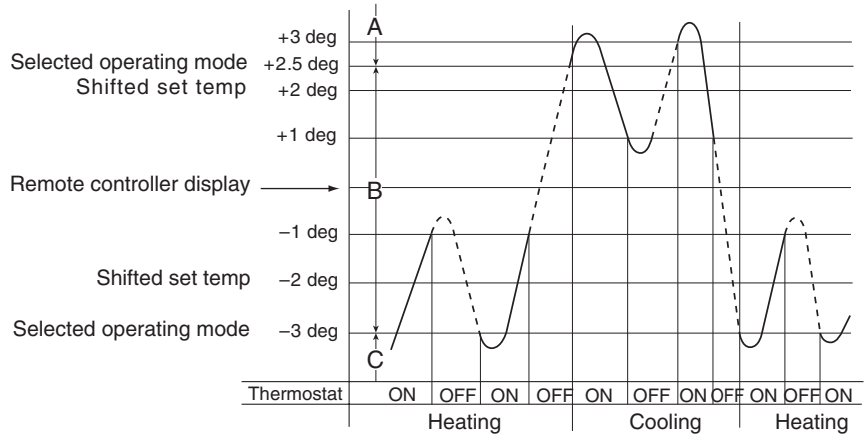
Example: Temperature set on the remote controller is 20°C.

| | Operating mode change | Shifted set temp. |
|---|---|---|
| 1 | Heating → Cooling | 20 + 2 + 0.5 = 22.5°C or higher (*2) |
| 2 | Cooling → Heating | 20 – 2 – 1.0 = 17°C or lower |

*2: During heating operation when the body sensor is used, a temperature shift is applied to the intake temperature detected by the sensor, in consideration for the difference in temperature at the top and bottom of the room. (Refer to the "Room Temperature Control" item.) If this intake shift temperature is 4°C, then the heating → cooling change occurs when the temperature detected by the body sensor is 26.5°C or higher.

(4) Cooling (heating) operation does not change if the room temperature changes from area C → A (or A → C) within 10 minutes after the compressor turns OFF. (Monitoring mode is excepted.)

(5) When the heating/cooling change occurs, the 4-way valve switches approximately 30 to 50 seconds after the compressor turns ON.

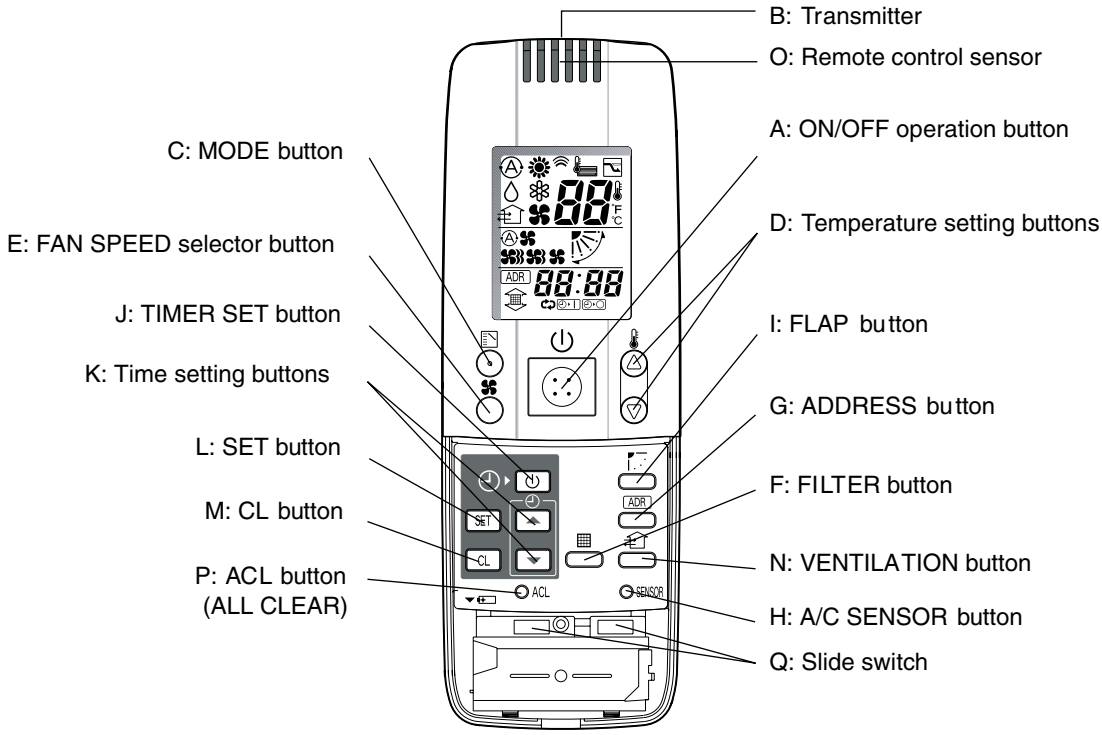


# 2. Wireless Remote Controller

**Optional Controller (Remote Controller)**

**Wireless Remote Controller / RCS-SH80AG.WL (for X type) / RCS-TH80AG.WL (for S Type) / RCS-TRP80ANG.WL (for T, LD Type) / RCS-BH80AG.WL (for AD, U, D, F, FM Type)**

## ■ How to Use the Wireless Remote Controller




**NOTE** The illustration above pictures the wireless remote control unit after the cover has been lowered and removed.

| | |
|---|---|
| **A: ON/OFF operation button** | This button is for turning the air conditioner on and off. |
| **B: Transmitter** | When you press the buttons on the wireless remote control unit, the ⌔ mark appears in the display to transmit the setting changes to the receiver in the air conditioner. |
| **C: MODE button** | Use this button to select one of the following five operating modes. |
| **(AUTO)** | Ⓐ : Used to automatically set cooling or heating operation. Only for single heat pump type<br>(Temperature range: 17 to 27°C) |
| **(HEAT)** | ☼ : Used for normal heating operation. Only for heat pump type<br>(Temperature range: 16 to 26°C) |
| **(DRY)** | ♢ : Used for dehumidifying without changing the room temperature.<br>(Temperature range: 18 to 30°C) |
| **(COOL)** | ❄ : Used for normal cooling operation.<br>(Temperature range: 18 to 30°C) |
| **(FAN)** | ✣ : Used to run the fan only, without heating or cooling operation. |
| **D: Temperature setting buttons** | ▲ : Press this button to increase the temperature setting.<br>▼ : Press this button to decrease the temperature setting. |
| **E: FAN SPEED selector button** | |
| **(AUTO)** | Ⓐ✣ : The air conditioner automatically decides the fan speeds. |
| **(HI)** | ✣ : High fan speed |
| **(MED)** | ✣ : Medium fan speed |
| **(LO)** | ✣ : Low fan speed |

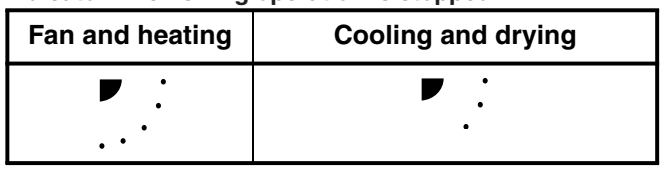
Continued

## 2. Wireless Remote Controller

| | |
|---|---|
| **F: FILTER button** | If a separately installed signal receiver is being employed, this button is used to turn off its filter lamp. When the filter lamp has lighted, first clean the filter, and then press the FILTER button to turn off the filter lamp. When a wired remote control unit and wireless remote control unit are both used, the filter sign on the wired remote control unit will appear. When this happens, first clean the filter, and then press the FILTER button on one of the remote control units to turn off the filter sign. |
| **G: ADDRESS button** | When a multiple number of indoor units that can be operated by the wireless remote control unit have been installed in the same room with a multi-unit or single-unit installation, this button enables addresses to be set in order to prevent the sending of signals to the wrong indoor unit. Each of up to six indoor units can be controlled separately using its own wireless remote control unit by matching the number of the address switch on the operation area of the indoor unit and the number used for the address of its remote control unit. (The indoor units cannot be controlled separately when they are used in a flexible combination format, simultaneous operation of multi-units format or any other such format since they will all operate at the same time.)<br>**NOTE** When the batteries are replaced, the address setting returns to "ALL", so you must make the setting again. |
| **H: A/C SENSOR button** | When you press this button (use a narrow-tipped object such as a ballpoint pen), the indication will disappear on the display. The room temperature is detected by the sensor which is built into the indoor unit and the air conditioner is controlled accordingly.<br>**NOTE** If the remote control is located near a heat source, such as a space heater or in direct sunlight, press the A/C SENSOR button to switch to the sensor on the indoor unit. |
| **I: FLAP button** | 1. Use this button to set the airflow direction to a specific angle.<br>The airflow direction is displayed on the remote control unit.<br>Operation mode — Number of airflow direction settings<br>(COOL) or (DRY): 3<br>(HEAT) or (FAN): 5<br>(AUTO)<br>Cooling mode: 3<br>Heating mode: 5<br>**CAUTION**<br>**In the Cool mode and Dry mode, if the flaps are set in a downward position, condensation may form and drip around the vent. Do not move the flap with your hands.**<br>**NOTE** This function is available only for models X, LD, S, T and K. |
| **(SWEEP)** | 2. Use this button to make the airflow direction sweep up and down automatically.<br>Press this button several times until the symbol appears on the display.<br>**To stop the swing operation**<br>Press the FLAP button again during the flap swing operation to stop the flap at the desired position. Then, the airflow can be set from the top position by pressing the FLAP button again. |

3

## 2. Wireless Remote Controller

| | |
|---|---|
| | **Indicator when swing operation is stopped**<br>  <br>**Fan and heating** / **Cooling and drying**<br>During cooling and drying, the flap does not stop at the downward position.<br>Even if the flap is stopped at the downward position during the swing operation, it does not stop until it moves to the third position from the top. |
| **NOTE** | This function is available only for models X, LD, S, T and K. |
| **J: TIMER SET button** | Use this button while the unit is operating to switch between timer settings. |
| **(OFF Timer)** | : The air conditioner stops after a preset time elapses. |
| **(OFF Cycle Timer)** | : The air conditioner always stops after a preset time elapses. |
| **(ON Timer)** | : The air conditioner starts after a preset time elapses. |
| **K: Time setting buttons** | : Press this button to increase the time.<br>: Press this button to decrease the time. |
| **L: SET button** | Use this button to set the timer. |
| **M: CL button** | Use this button to clear the timer setting. |
| **N: VENTILATION button** | This is used when a ventilation fan (available commercially) is connected. Pressing the VENTILATION button turns the fan on and off. The ventilation fan also turns on and off when the air conditioner unit is turned on and off. (The display of the remote control unit shows "" while the ventilation fan is running.)<br>* If the VENTILATION button is held down for 4 or more seconds when the batteries have been replaced, "" appears on the display, and the ventilation fan can be used. |
| **O: Remote control sensor** | This detects the temperature around the remote control unit when the remote control unit position has been selected using the sensor button. |
| **P: ACL button (ALL CLEAR)** | Puts the wireless remote control unit into pre-operation status. This is used after the batteries have been replaced or when the slide switch setting has been changed. |
| **Q: Slide switch** | This switch is for setting the operation mode of the indoor unit and setting the flaps. |

**NOTE**

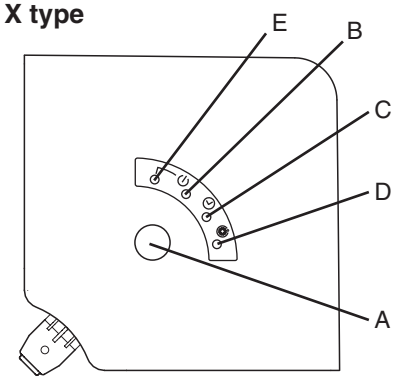
- The wireless remote control unit sends the temperature signal to the air conditioner regularly at five-minute intervals. If the signal from the wireless remote control unit stops for more than ten minutes due to the loss of the wireless remote control unit or other trouble, the air conditioner will switch to the temperature sensor which is built into the indoor unit and control the room temperature. In these cases, the temperature around the wireless remote control unit may differ from the temperature detected at the air conditioner's position.
- When low fan speed is selected and the air conditioner is in cooling operation at a low outdoor temperature of less than 10°C, the air conditioner may automatically switch to medium fan speed to prevent freezing.

# 2. Wireless Remote Controller

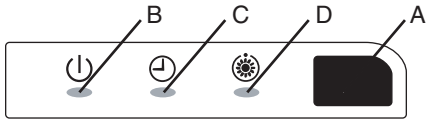
## ■ Receiver

The signal receivers with the exception of the separately installed signal receiver are mounted on the indoor units.

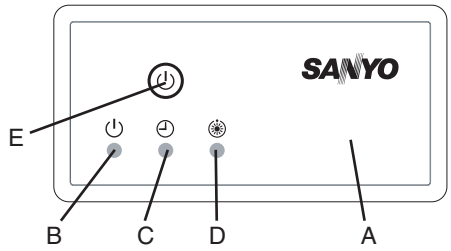
**X type**



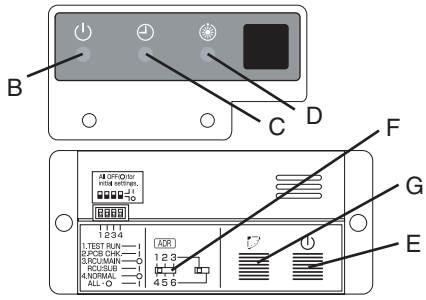

**K type**



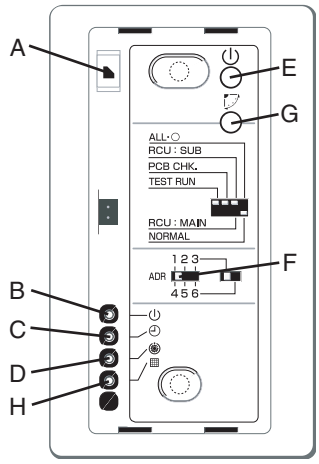

**T, LD type**




**S type**




**Separately installed signal receiver (AD, U, D, F, FM type)**




| | | |
|---|---|---|
| **A: Receiver** | | This section picks up infrared signals from the wireless remote control unit (transmitter). |
| **Indication lamps** | | One of these lamps will blink when trouble has occurred. When an indicator lamp starts to blink, refer to "Trouble Diagnosis" in TEST RUN SERVICE MANUAL. |
| | **B: Operation lamp** | This lamp lights when the appliance is turned on. |
| | **C: Timer lamp** | This lamp lights when the system is being controlled by the timer. |
| | **D: Standby lamp** | ● This lamp lights at the following times during heating operations: When operation has started, when the thermostat has been activated, during defrosting operation.<br>● The lamp blinks when trouble has occurred. |
| **E: Emergency operation button** | | This is used when operation cannot be performed due to trouble with or loss of the wireless remote control unit. |
| **F: ADDRESS switch** | | This switch is used in order to prevent the sending of signals to the wrong indoor unit when a multiple number of indoor units that can be operated by the wireless remote control units have been installed in the same room. |
| **G: SWING button** | | When this button is pressed, the airflow sweeps up and down automatically. |
| **H: FILTER lamp** | | This lamp lights to indicate that it is time to clean the filter. |

- **If 2 beeps are heard, the operation lamp among the indication lamps has lighted and the timer lamp and standby lamp blink alternately. In cases where heat pump models are used, this indicates a Cooling/Heating mode mismatch and, as such, operation in the desired mode cannot be performed.**
  **(The same beeps will be heard and the same operation lamps will light when auto cooling/heating has been selected on a model which does not have the auto cooling/heating function.)**
- **When local operation has been set to disabled because the centralized control mode is established, for instance, pressing the ON/OFF operation button, MODE button or temperature setting buttons results in the sounding of 5 beeps, and the attempted change in the operation will not be accepted.**

# 2. Wireless Remote Controller

## How to Install the Wireless Remote Controller Receiver

### ■ RCS-SH80AG.WL for 4-Way Cassette (X Type)

### 2-1. Installing the Receiver Unit

The only corner where the receiver unit can be installed is the one shown in Fig. 3-1. Therefore, consider the direction of the panel when it is installed on the indoor unit.

(1) Remove the intake grille.

(2) Remove the screws that fasten the adjustable corner cap, then slide the adjustable corner cap to the side to remove it. (Fig. 3-2)

(3) The square hole used for the panel wiring is filled with packing (sponge material) used for insulation.* Remove the packing, then pass the wiring from the wireless receiver unit through the grill.

Twist the wires together and use a cable fastener to fasten them and fix with screw, then replace the packing in the hole as it was before. (Fig. 3-3)

* If this packing is not used, there is danger of condensation on the wiring. Be sure to replace the packing.

(4) After completing wiring as described in “Wiring the Receiver Unit” on the next page, twist the wires together and use a cable fastener to fasten them, leaving a length of wiring that is long enough to permit removal of the adjustable corner cap.(Fig. 3-3)

(5) Install the receiver unit in the panel. At this time, slide the receiver unit so that each of the 3 tabs fits into its respective hole. Take care that the wires are not pinched. (Fig. 3-4)

* Refer to the instruction manual provided with the panel.

**NOTE**

- Do not twist the control wiring together with the power wiring because this may cause a malfunction.
- Install a noise filter or take other appropriate action if electrical noise affects the power supply circuit of the unit.

* For wiring and test run procedures, refer to “Wiring the Receiver Unit” and “Test Run.”

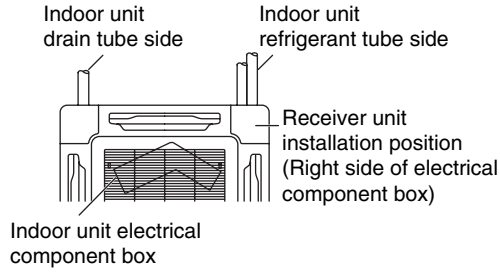



**Fig. 3-1**

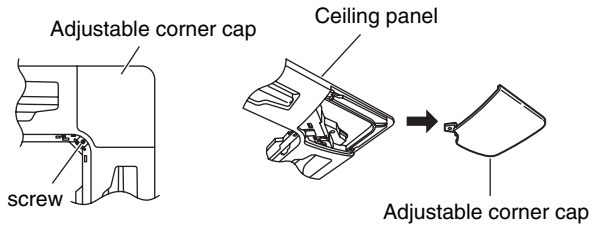



**Fig. 3-2**

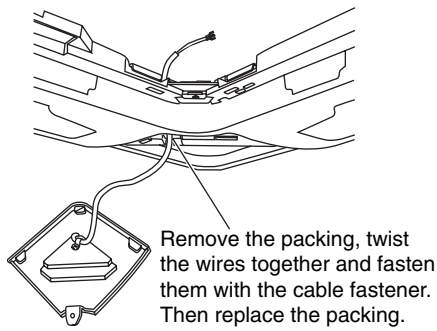



**Fig. 3-3**

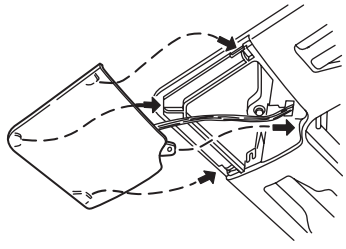
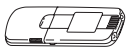
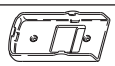


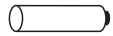
**Fig. 3-4**

3

# 2. Wireless Remote Controller

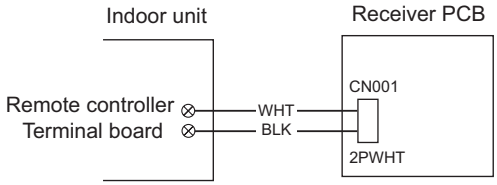
## 2-2. Accessories

| No. | Parts | Q'ty |
|---|---|---|
| 1 | Receiver unit | 1 |
| 2 | Remote control unit  | 1 |
| 3 | Remote control holder  | 1 |

| No. | Parts | Q'ty |
|---|---|---|
| 4 | AAA alkaline battery  | 2 |
| 5 | Tapping screw 4 × 16  | 2 |
| 6 | Clamp | 1 |
| 7 | Fastening screw 4 × 12  | 1 |

## 2-3. Wiring the Receiver Unit

- Connection diagram




- Connect the wire from the receiver unit to the indoor unit remote controller terminal board. (The wire has no polarity.)

## 2-4. Precautions on Simultaneous Installation of Wired Remote Controller and Wireless Remote Controller

By installing a wired remote controller, the wireless remote controller kit can permit dual remote control operation at the same time.
(Up to 2 units of remote controllers - a wireless kit and a wired unit - can be installed.)
Dual remote control operation can control 1 or multiple air conditioners using several remote controllers.

**CAUTION**

- **Be sure to determine the correct terminal numbers on the indoor unit when wiring the remote controller. The remote controller will be damaged if high voltage (such as 200 VAC) is applied.**
- **The wireless remote controller kit components cannot be used for more than 1 indoor unit at a time. (However, separate receiver units may be used simultaneously.)**
- **When a wireless remote controller kit and a wired remote controller are used simultaneously, assign either the wireless remote controller or the wired remote controller as the sub remote controller unit.**

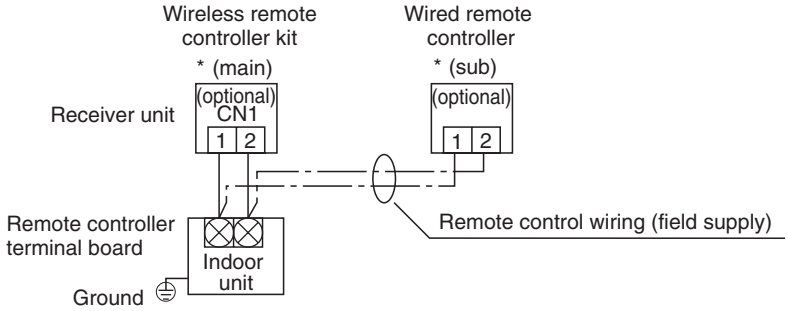
# 2. Wireless Remote Controller

(1) To assign the wired remote controller as the sub unit, locate the address connector at the rear of the wired remote controller PCB and disconnect it. Reconnect it to the sub unit position.

(2) To assign the wireless remote controller as the sub unit, locate the dip switch [S003] on the wireless receiver unit PCB. Set the No. 3 switch to the ON position.

**When 1 indoor unit is operated with 2 remote controllers:**

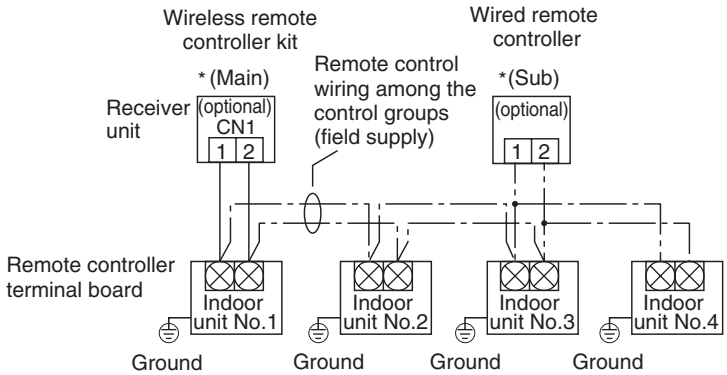
(The indoor unit runs according to which of the remote controllers is assigned as the main or sub unit.)




* Use field wiring cables with a cross-sectional area of at least 0.5mm$^2$ to 2mm$^2$.
* The maximum total length of crossover cables must be no longer than 400m.

**When several groups of indoor units are operated with 2 remote controllers:**

(The remote controller (main or sub unit) can operate with any indoor unit.)




* Use field wiring cables with a cross-sectional area of at least 0.5mm$^2$ to 2mm$^2$ .
* The maximum total length of crossover cables must be no longer than 200m.

**Fig. 3-5**

## 2-5. How to use the Test Run Setting

1. Set DIP switch [S003] No. 1 on the wireless receiver unit PCB from OFF to ON.
2. All indicator lamps in the display section blink during test run operation.
3. No temperature control is available during the test run.
4. After the test run, be sure to reset DIP switch No. 1 back to the OFF position and check that no indicator lamps are blinking. Then remount and attach the PCB cover as before.

**NOTE**

To avoid placing excessive operating load on the equipment, use this function only when conducting the test run.

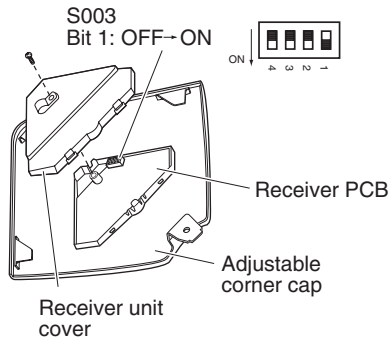



**Fig. 3-6**

3

# 2. Wireless Remote Controller

## ■ RCS-TRP80ANG.WL for Ceiling Mounted (T, LD Type)

### 2-6. Installing the Receiver Unit

(1) To take off the side panel, open the intake grille and remove the screw. Then remove the side panel by moving it toward the front (direction of arrow). (Fig. 3-7)

(2) Wrap the end of a standard (flat) screwdriver blade with vinyl tape. Then insert the screwdriver blade into the groove on the side of the cover below the “O” mark, and pry open the cover. (Fig. 3-8) (Take care not to scratch the panel.)

(3) Pass the lead wire through the panel, then install the receiver unit in the panel hole.

(The projections on the receiver unit engage the panel holes to attach the unit.)

(4) Fasten the receiver lead wire to the fastener that holds the louver motor wiring. (Fig. 3-9)

(5) Reattach the side panel.

(6) Route the lead wire from the receiver unit along the louver motor wiring and other wiring and fasten them with a fastener. (Fig. 3-10)

* Access the hole at the top of the electrical component box to draw in the wiring.

**NOTE**

- Do not twist the control wiring with the power wiring because this may cause malfunction.
- Install a noise filter or take other appropriate action if electrical noise disturbs the unit's power supply circuit.

* For the wiring and test run procedures, refer to “Wiring the Receiver Unit” and “Test Run.”

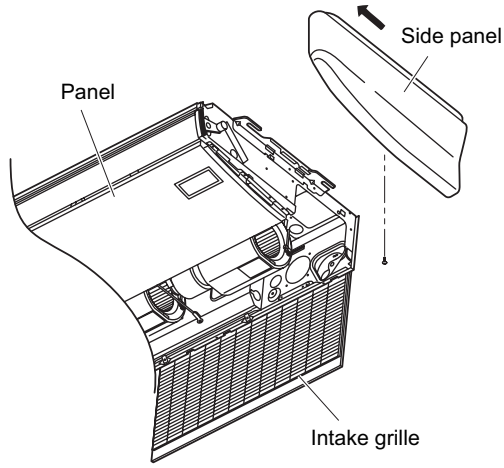



**Fig. 3-7**

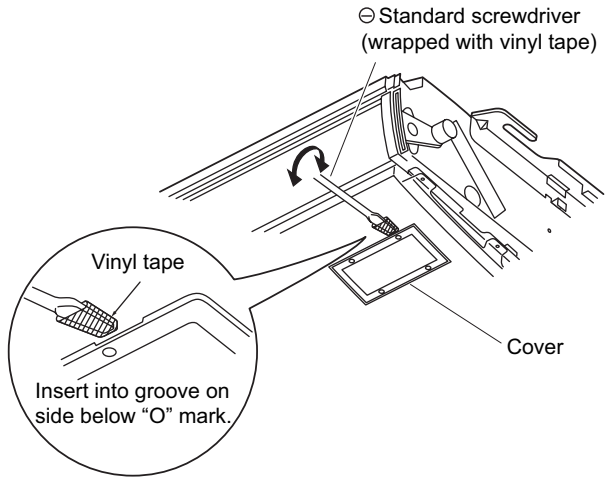



**Fig. 3-8**

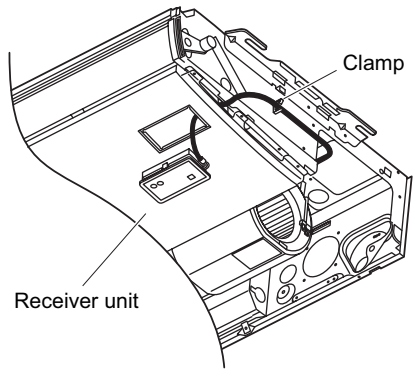



**Fig. 3-9**

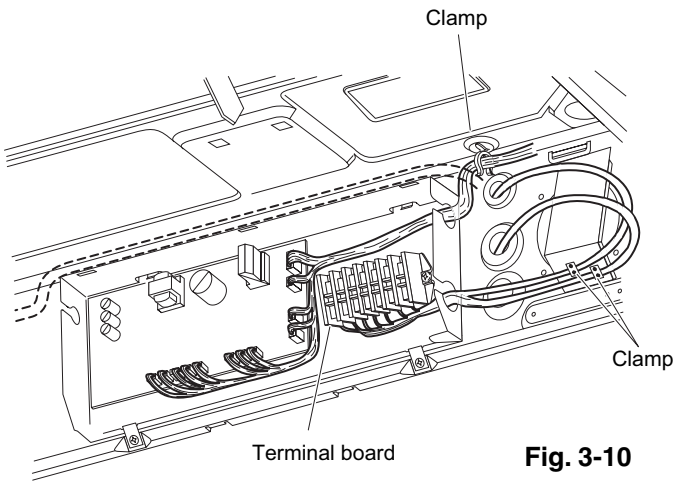



**Fig. 3-10**

# 2. Wireless Remote Controller

**For 1-Way Air Discharge**
**High-Ceiling Cassette Type (LD Type)**

## 2-7. Installing the Receiver Unit

(1) Push the cover tabs outwards, and pull the cover off toward the front side of the panel. (Fig. 3-11)

(2) Pass the lead wire through the panel, then install the receiver into the panel hole.

(3) Press the receiver lead wire into the rib along the reverse side of the panel, and pass the wire through the notch. (Fig. 3-12)

(4) Install the panel onto the indoor unit.

(5) Take the lead wire that extends from the panel and fasten it to the top surface of the indoor unit using a clamp. (Fig. 3-13)

(6) Use the supplied clamp on the fan casing latch to fasten the lead wire to the fan casing. Pull the lead wire through the hole at the bottom of the electrical component box, and connect the wire to the remote controller terminal plate. (Fig. 3-14)

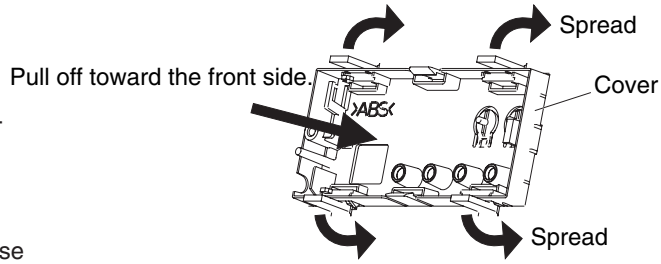



**Fig. 3-11**

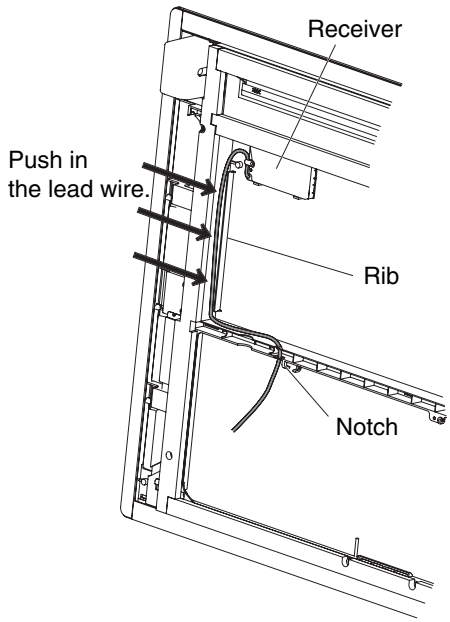



**Fig. 3-12 Reverse side of panel**

**NOTE**

- Do not run the receiver lead wire together with the power cable or other wiring. Doing so may result in malfunction.
- Fasten the lead wire securely so that it does not become caught in the fan.
- If electrical noise occurs in the unit power, a noise filter must be installed or other suitable measures taken.

* For information on system wiring and conducting a test run, refer to Section 4 “Electrical Wiring” and Section 7 “Test Run” of the Installation Instructions.

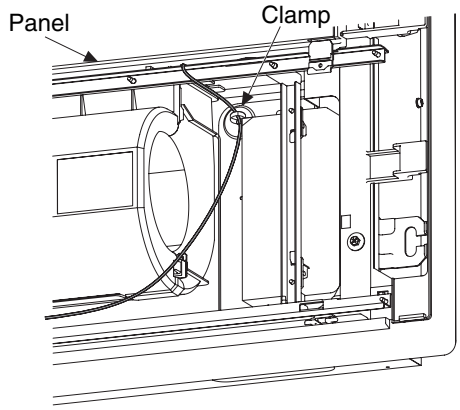



**Fig. 3-13**

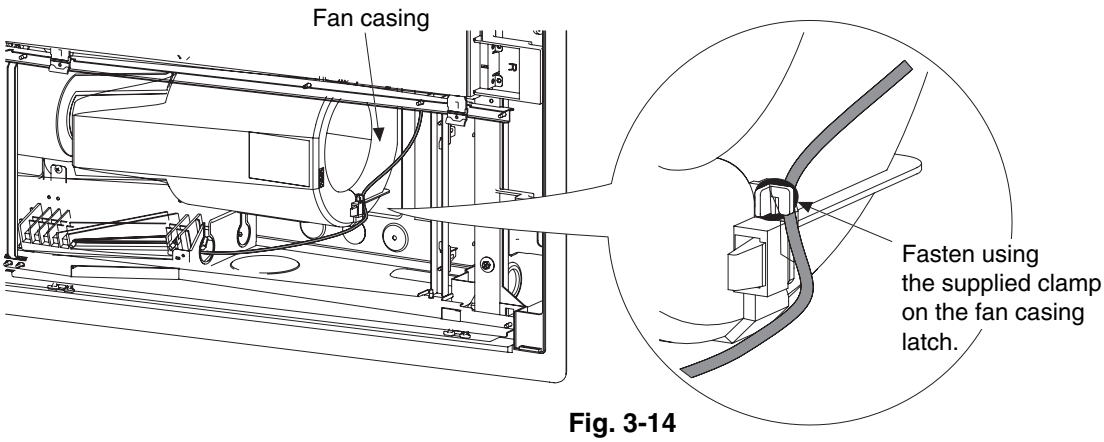
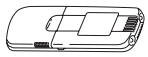
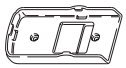



**Fig. 3-14**

# 2. Wireless Remote Controller

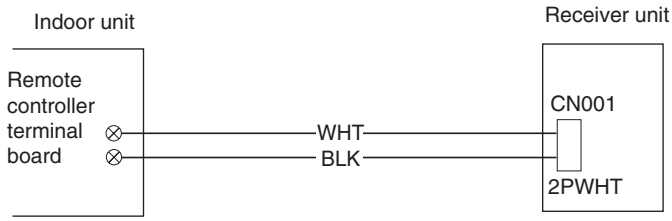
## 2-8.Accessories Supplied with Unit

| No. | Parts | Q'ty |
|---|---|---|
| 1 | Receiver unit | 1 |
| 2 | Remote control unit  | 1 |
| 3 | Remote control holder  | 1 |

| No. | Parts | Q'ty |
|---|---|---|
| 4 | AAA alkaline battery | 2 |
| 5 | Tapping screw 4 × 16 | 2 |

## 2-9.Wiring the Receiver Unit

- Connection diagram




- Connect the provided wire (already connected to the receiver unit) to the indoor unit remote controller terminal board. (The wire has no polarity.)

## 2-10.Precautions on Simultaneous Installation of Wired Remote Controller and Wireless Remote Controller

By installing a wired remote controller, the wireless receiver unit can permit dual remote control operation at the same time.
(Up to 2 units of remote controllers - a wireless remote controller and a wired remote controller - can be installed.)
Dual remote control operation can control 1 or multiple air conditioners using several remote controllers.

3

**CAUTION**

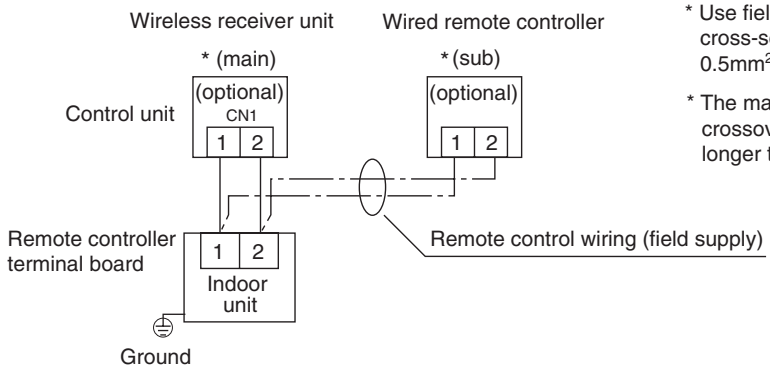
- **Be sure to determine the correct terminal numbers on the indoor unit when wiring the remote controller. The remote controller will be damaged if high voltage (such as 200 VAC) is applied.**
- **The wireless receiver unit components cannot be used for more than 1 indoor unit at a time. (However, separate receiver units may be used simultaneously.)**
- **When a wireless receiver unit and a wired remote controller are used simultaneously, assign either the wireless remote controller or the wired remote controller as the sub remote controller unit.**

(1) To assign the wired remote controller as the sub unit, locate the address connector at the rear of the wired remote controller PCB and disconnect it. Reconnect it to the sub unit position.

(2) To assign the wireless remote controller as the sub unit, locate the DIP switch [S003] on the wireless control unit. Set the No. 3 switch to the ON position.

**When 1 indoor unit is operated with 2 remote controllers:**

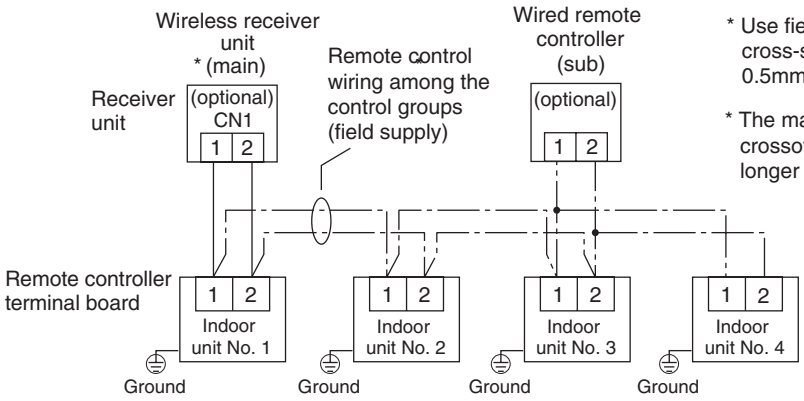
(The indoor unit runs according to which of the remote controllers is assigned as the main or sub unit.)




* Use field wiring cables with a cross-sectional area of at least 0.5mm$^2$ to 2mm$^2$.
* The maximum total length of crossover cables must be no longer than 400m.

**When several groups of indoor units are operated with 2 remote controllers:**

(The remote controller (main or sub unit) can operate with any indoor unit.)




* Use field wiring cables with a cross-sectional area of at least 0.5mm$^2$ to 2mm$^2$.
* The maximum total length of crossover cables must be no longer than 200m.

**Fig. 3-15**

### 2-11. How to Use the Test Run Setting

1. Set DIP switch [S003] No. 1 on the wireless receiver unit PCB from OFF to ON.
2. All indicator lamps in the display section blink during test run operation.
3. No temperature control is available during the test run.
4. After the test run, be sure to reset DIP switch No. 1 back to the OFF position and check that no indicator lamps are blinking. Then remount and attach the PCB cover as before.

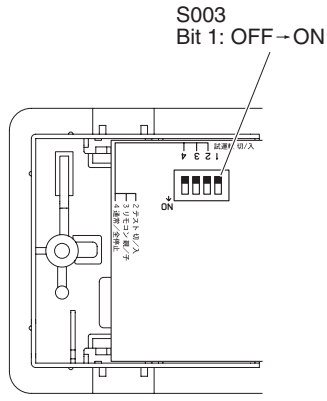



**Fig. 3-16**

**NOTE**

- To avoid placing excessive operating load on the equipment, use this function only when conducting the test run.
- The unit does not receive remote controller signals for approximately 1 minute after the power is turned ON. This is not a malfunction. (The signals are received, but have no immediate effect.)

# 2. Wireless Remote Controller

## ■ RCS-TH80AG.WL for 2-Way Type (S Type)

### For 2-Way Cassette Type (S Type)

### 2-12. Installing the Display

- Remove panel cover A and install the display.

(1) Remove cover A from the rear side of the panel.

(2) Cover B is fit inside cover A. Therefore, spread cover A and remove cover B, as shown in Fig. 3-17.

Remove the tape that holds cover B in place. It was used for protection during shipping.

(3) Fit the display into the panel.

(4) Pass the display lead wire through the notch in the panel. Use the hole in the plate and a clamp to fasten the wire in place.

(5) Reattach cover A.

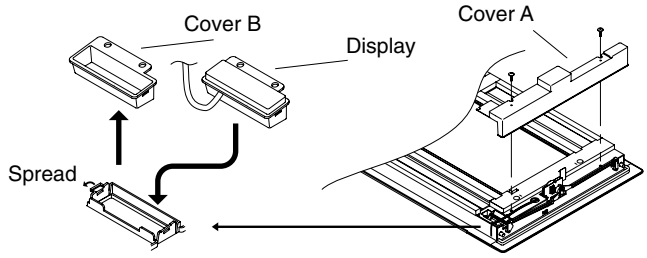



**Fig. 3-17**

### 2-13. Installing the Control Unit

**NOTE**

- Do not twist the control wiring with the power wiring because this may cause malfunction.
- Install a noise filter or take other appropriate action if electrical noise affects the power supply circuit of the unit.

(1) Use the 2 supplied screws (4 × 10) to attach the control unit at the location shown in the diagram below.

(2) Connect the display and control unit 6P connectors.

(3) Connect the control unit lead wire to the indoor unit remote controller wiring terminal.

(4) Bend the lead wire into the correct shape, and use a figure 3-19 clamp to fasten it in place.

(5) Attach the ceiling panel.

* For the wiring and test run procedures, refer to “Wiring the Receiver Unit” and “Test Run.”

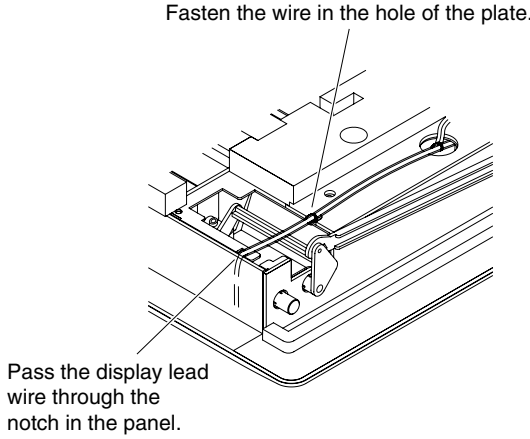



**Fig. 3-18**

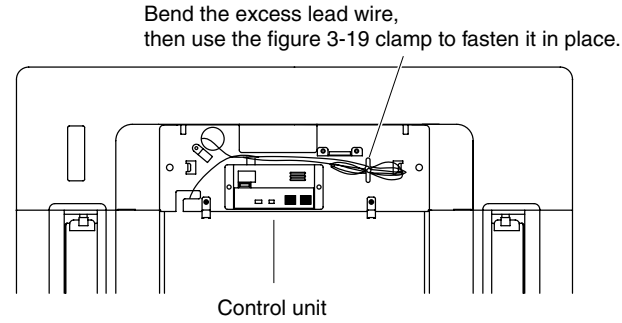



**Fig. 3-19**

# 2. Wireless Remote Controller

## 2-14. Accessories

| No. | Parts | Q'ty |
|---|---|---|
| 1 | Control unit | 1 |
| 2 | Display unit | 1 |
| 3 | Remote control unit | 1 |
| 4 | Remote control holder | 1 |
| 5 | AAA alkaline battery | 2 |

| No. | Parts | Q'ty |
|---|---|---|
| 6 | Spacer | 2 |
| 7 | Tapping screw 4× 10  | 4 |
| 8 | Tapping screw 4× 16 Truss-head Phillips  | 2 |
| 9 | Vinyl clamp L 150 | 3 |

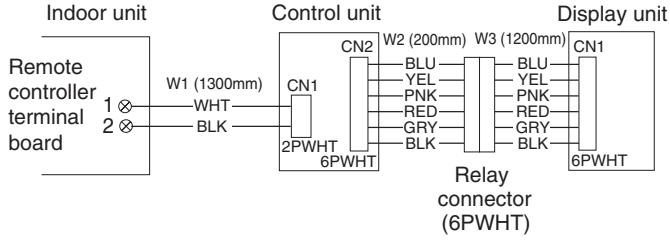
## 2-15. Wiring the Receiver Unit

- Connection diagram

1. Connect W1 to the indoor unit remote controller wiring terminal. (It has no polarity.)
2. Connect W3 from the display and W2 from the control unit to the relay connector.

## 2-16. Precautions on Simultaneous Installation of Wired Remote Controller and Wireless Remote Controller

By installing a wired remote controller, the wireless receiver unit can permit dual remote control
operation at the same time.
(Up to 2 units of remote controllers - a wireless remote controller and a wired remote controller -
can be installed.)
Dual remote control operation can control 1 or multiple air conditioners using several remote controllers.




**CAUTION**

- **Be sure to determine the correct terminal numbers on the indoor unit when wiring the remote controller. The remote controller will be damaged if high voltage (such as 200 VAC) is applied.**

3

## 2. Wireless Remote Controller

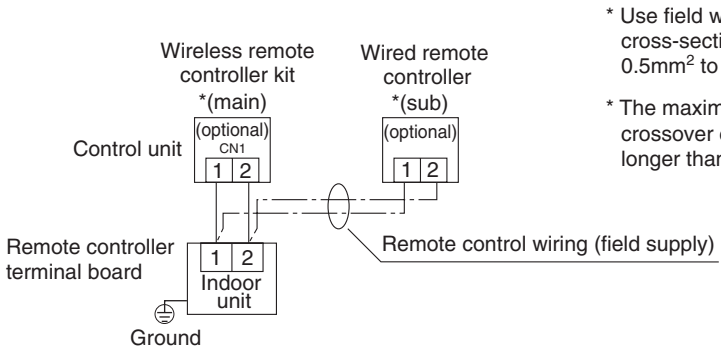
**CAUTION**

- **The wireless receiver unit components cannot be used for more than 1 indoor unit at a time. (However, separate receiver units may be used simultaneously.)**
- **When a wireless receiver unit and a wired remote controller are used simultaneously, assign either the wireless remote controller or the wired remote controller as the sub remote controller unit.**

- To assign the wired remote controller as the sub unit, locate the address connector at the rear of the wired remote controller PCB and disconnect it.
  Reconnect it to the sub unit position.
- To assign the wireless remote controller as the sub unit, locate the DIP switch [S003] on the wireless control unit PCB. Set the No. 3 switch to the ON position.

**When 1 indoor unit is operated with 2 remote controllers:**

(The indoor unit runs according to which of the remote controllers is assigned as the main or sub unit.)




**When several groups of indoor units are operated with 2 remote controllers:**

(The remote controller (main or sub unit) can operate with any indoor unit.)

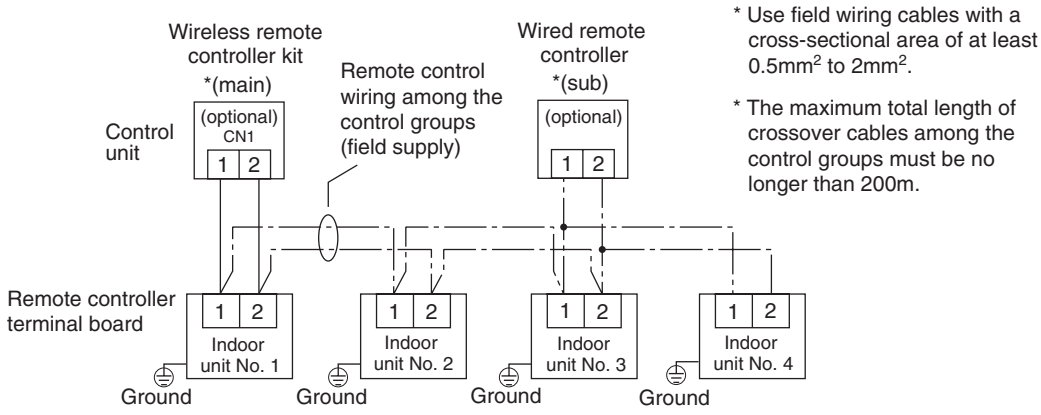



**Fig. 3-20**

### 2-17. How to Use the Test Run Setting

1. Set DIP switch [DS] No. 1 on the wireless receiver unit PCB from OFF to the ON position.
2. All indicator lamps in the display section blink during test run operation.
3. No temperature control is available during the test run.
4. After the test run, be sure to reset DIP switch No. 1 back to the OFF position and check that no indicator lamps are blinking.

**NOTE**

- Be aware that test run is not possible if the ceiling panel is not attached.
- To avoid placing an excessive load on the equipment, use this function only when conducting the test run.

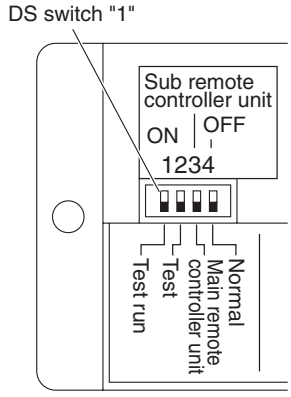



**Fig. 3-21**

# 2. Wireless Remote Controller

## ■ RCS-BH80AG.WL for AD, U, D, F, FM Type

### 2-18. Accessories Supplied with Separate Receiver Unit

| No. | Parts | Q'ty |
|---|---|---|
| 1 | Separate receiver unit (provided 200mm power cable) | 1 |
| 2 | Plate mounting | 1 |
| 3 | Screws M4 × 25 | 2 |
| 4 | Screws M4 × 40 | 2 |
| 5 | Wood screws | 2 |

| No. | Parts | Q'ty |
|---|---|---|
| 6 | Spacer | 4 |
| 7 | Wire joints | 2 |
| 8 | Clamp | 1 |
| 9 | Pattern template 95 × 51 | 1 |

unit: mm

### 2-19. Important Information for Installation of 1 Separate Receiver Unit

**<Installation location>**

- Do not install in a location where the air contains oil mist, such as in a kitchen or factory.
- Do not install next to a window, or in any other location directly exposed to sunlight and outside air.
- Do not install nearby devices which can be expected to produce electrical noise, such as elevators, automatic doors, and industrial sewing machines.
- If the receiver unit is installed near a rapid-start type or inverter-type fluorescent lamp (a lamp which does not include a glow lamp), it may not be possible to receive the wireless remote controller signal in some cases. In order to prevent interference from fluorescent lamps, leave a minimum of 2 meters between the receiver unit and the fluorescent lamps, and install the receiver unit in a location where it can receive the wireless remote controller signal when the fluorescent lamps are lit.

### 2-20. How to Install the Separate Receiver Unit

**NOTE**

- To avoid malfunction of the remote controller, do not assemble or run remote control wiring together with the power cables, and do not enclose them in the same metal conduit.
- When the power unit induces electrical noise, it is recommended that a noise filter or the like be installed.

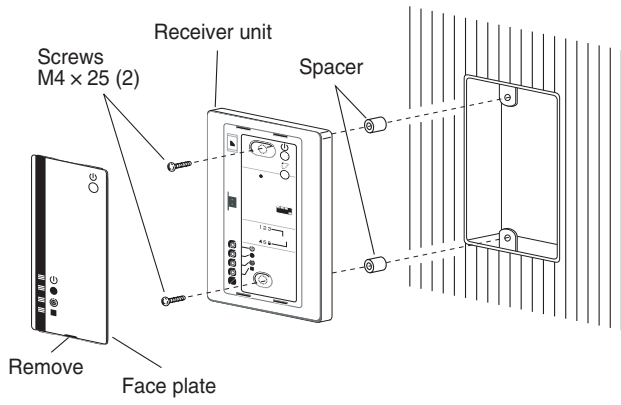



**Fig. 3-22**

## 2. Wireless Remote Controller

- For flush mounting into a wall, install the separate receiver unit in a metal switch box (field supply) that has been recessed into the wall in advance.

1. Insert a flathead screwdriver or similar tool into the notch, and remove the face plate.
2. Fix the receiver unit with 2 M4 screws provided. Do not overly tighten, and use the provided spacers. If the receiver unit does not fit in the wall, cut spacers to adjust the clearance.
3. Connect the receiver unit wiring (2-core cable) with the cables extended from the indoor unit. (Refer to the section on receiver unit wiring.)

   Be sure to determine the correct terminal numbers on the indoor unit when wiring the receiver unit.

   The remote controller will be damaged if high voltage (such as 200 VAC) is applied.
4. Reinstall the face plate.

- When using exposed mounting for the receiver unit, install onto a wall where the receiver unit can be attached.

1. Insert a flathead screwdriver or similar tool into the groove on the bottom of the receiver unit. Pry open with the screwdriver and remove the lower case. (Fig. 3-23).
2. In order to later pass the receiver wiring out through the upper case (thin part at the top center), use nippers or a similar tool to cut a notch in the same size as the remote controller cord (optional). (Fig. 3-24)
3. Disconnect the wires that were connected to the connector at the time of shipment.
4. Fasten the remote controller cord (optional) at the position shown in Fig. 3-25, using the provided clamp. Then connect the cord to the receiver connector.
5. Shape the remote controller cord as shown in Fig. 3-25 so that it fits at the top inside the receiver unit, above the PCB. Then attach the lower case. At this time, bend the head of the clamp so that it faces sideways.
6. Remove the nameplate and use 2 wood screws to attach the receiver unit.
7. Use the provided cord clips to fasten the remote controller cord to the wall.
8. Reattach the nameplate.

- If the separate receiver unit is installed on the ceiling, use the provided ceiling mounting bracket for installation.

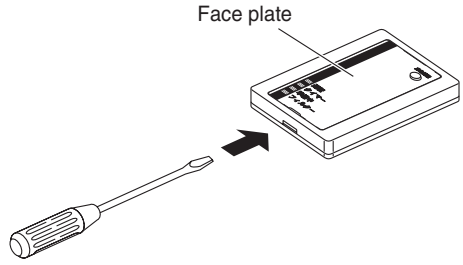



**Fig. 3-23**

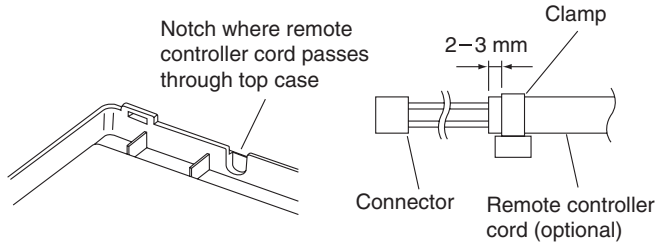



**Fig. 3-24**

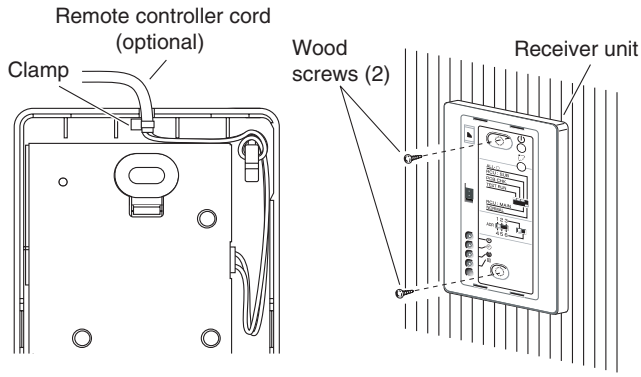



**Fig. 3-25**

3

## 2. Wireless Remote Controller

1. Insert a screwdriver or similar tool into the notch at the bottom to remove the receiver nameplate.
2. Cut a section out of the ceiling along the provided paper pattern (95 × 51 mm).
3. Pass the wire through the provided mounting bracket and insert the bracket into the installation hole. (Fig. 3-26)
4. Use bracket parts (A) and (B) to securely grip the ceiling material. (Fig. 3-27)
5. Connect the receiver wire (2-core) to the wire from the indoor unit.

   (Refer to “Wiring the Receiver Unit.”)

   Check the terminal number on the indoor unit before wiring the receiver unit and be sure not to wire incorrectly. (The unit will be damaged if high voltage, such as 200 VAC, is applied.)
6. Adjust the provided spacers so that they are several millimeters larger than the thickness of the ceiling material. Pass the 2 supplied screws (M4 × 40) through the spacers and tighten them enough to hold the receiver unit in place.
7. Return parts (A) and (B) through the gap between the ceiling and receiver unit so that they are contained in the openings. Then tighten the screws.

   Do not tighten the screws excessively. This may result in damage or deformation of the case.

   Tighten to the point where the receiver unit can be moved slightly by hand. (Fig. 3-28)
8. Reattach the nameplate.

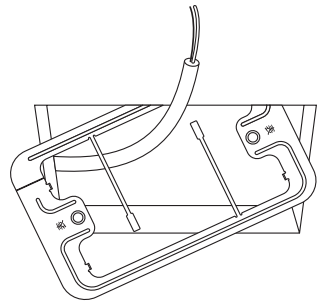


**Fig. 3-26**

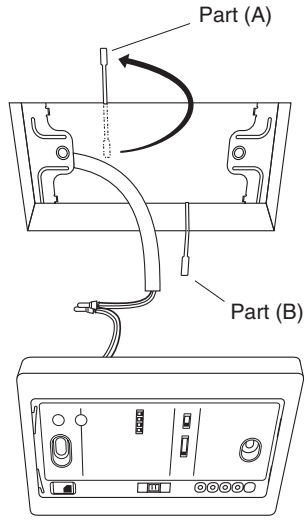



**Fig. 3-27**

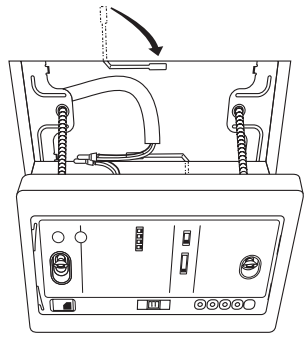


**Fig. 3-28**

3

# 2. Wireless Remote Controller

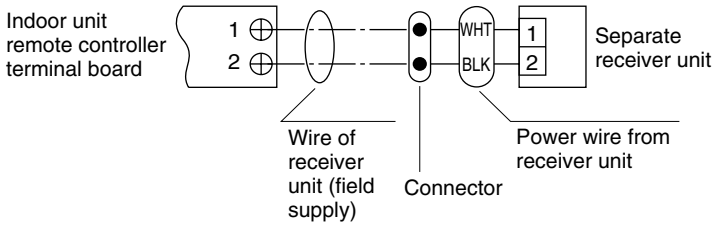
## 2-21. Wiring the Separate Receiver Unit

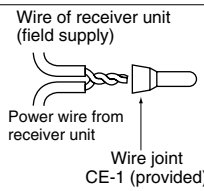
* Use wires that are 0.5 $mm^2$ – 2 $mm^2$ in diameter.

* The wiring length must not exceed 400 m.

### <Flush Mounting>

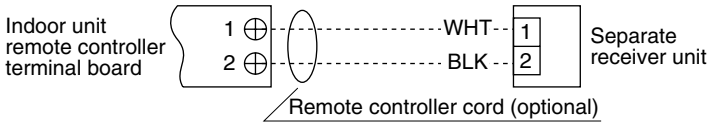
- Connection diagram




| | | |
|---|---|---|
| Provided wire joint (WHT 2) |  | 1. Strip the insulation to approximately 14mm from the ends of the wires to be connected.<br>2. Twist together the 2 wires and create a crimp connection at the wire joint.<br>3. If a special crimping tool is not used, or if the connection is soldered, insulate the wires using insulation tape. |

### <Exposed Mounting>

- Connection diagram




- Use the remote controller cord (optional) for wiring the separate receiver unit.

1. For the methods used to install the remote controller cord, refer to “For flush mounting into a wall, install the separate receiver unit in a metal switch box (field supply) that has been recessed into the wall in advance” on P. 3-21.
2. When using the remote controller cord (optional), refer to the instruction manual that came with the cord.

   Check the terminal number on the indoor unit before wiring the remote controller and be sure not to wire incorrectly. (The unit will be damaged if high voltage, such as 200 VAC, is applied to it.)

# 2. Wireless Remote Controller

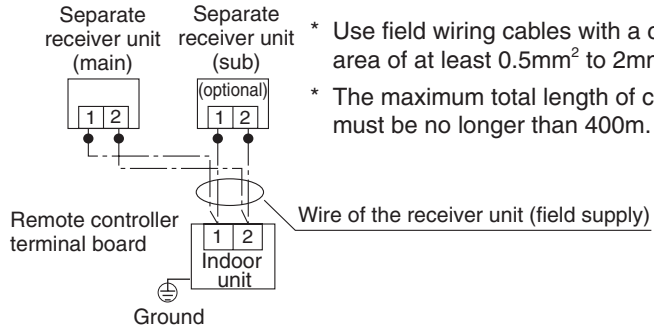
## 2-22. Important Information for Installation of 2 Separate Receiver Units

When using 2 receiver units to operate 1 or more indoor units at the same time, follow the procedure below to install them.

- Installation method

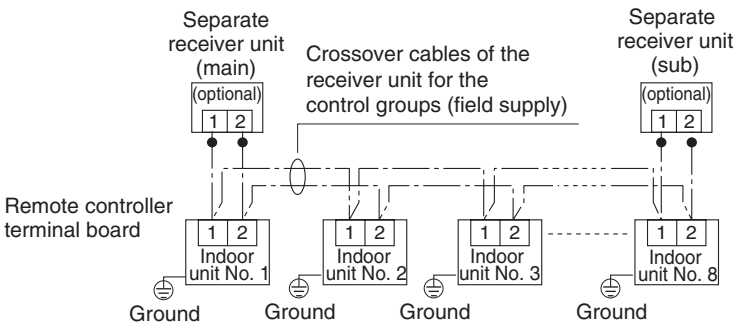
1. If 2 remote controllers are installed, set one of them as the “main remote controller” (setting at time of factory shipment).
2. At the other remote controller, remove the receiver name-plate and switch the DIP switch to “sub remote controller.” Under these conditions, the receiver unit functions as the sub receiver unit.
   * The TIMER lamp lights only at the remote controller that receives the signal.

- Basic wiring diagram
  * When connecting the wires, be careful not to wire incorrectly.
    (Incorrect wiring will damage the unit.)
- Using 2 separate receiver units to control 1 indoor unit:




* Use field wiring cables with a cross-sectional area of at least 0.5mm$^2$ to 2mm$^2$.
* The maximum total length of crossover cables must be no longer than 400m.

- Using 2 separate receiver units to control a group of multiple indoor units:
  * The main and sub receiver units will operate regardless of the indoor unit in which they are installed.




* Use wires that are 0.5 mm$^2$ – 2 mm$^2$ in diameter.
* The wiring length must not exceed 400 m.

# 2. Wireless Remote Controller

### 2-23. Test Run Setting

1. Remove the receiver unit face plate, and set the DIP switch to “Test Run - ON” position.
2. Run the air conditioner using the wireless remote controller by pressing the “ON/OFF” button.

- All LEDs (“RUN,” “TIMER” and “STANDBY”) blink during test run operation.
- No temperature control is effective with the wireless remote controller in the “Test Run - ON” position.

  To avoid mechanical strain on the air conditioner, do not use this mode except for conducting a test run.

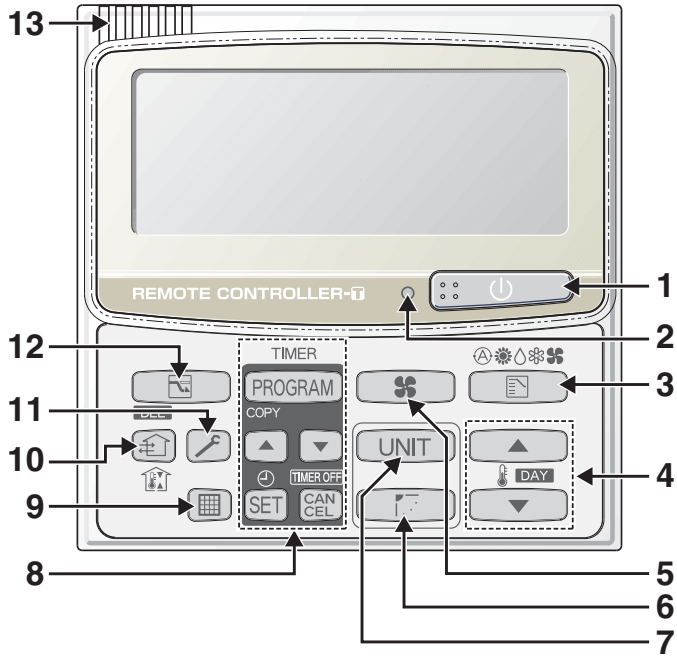
3. Select any one of the operation modes HEAT, COOL or FAN for the test run.
   * The outdoor unit will not start running for about 3 minutes after the power ON button is pressed.
4. After the test run operation, stop the air conditioner using the wireless remote controller, and then reset the DIP switch in the receiver unit as it was before. (To prevent constant test running of the air conditioner, the receiver unit has a 60-minute off timer function.)

# 3. Timer Remote Controller

**Timer Remote Controller/RCS-TM80BG**

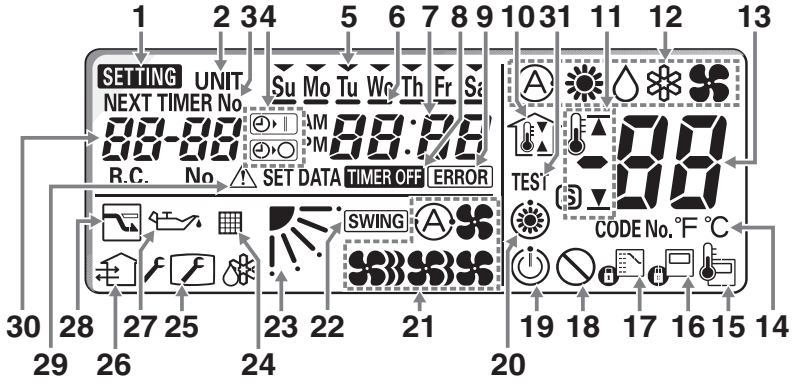
## ■ How to Use the Timer Remote Controller

### Operating buttons






### Display



# 3. Timer Remote Controller

## ■ Names and Operations

**Operation Section** **(Refer to the previous page)**

1. **Start/Stop button**
   Pushing this button starts, and pushing again stops the unit.
2. **Operation lamp**
   The lamp is turned on when an air conditioner is in operation.
   This lamp blinks when an error occurs or a protective device is activated.
3. **Mode Select button**
   Pushing this button to select an operation mode. (AUTO Ⓐ /HEAT☼ /DRY◊ /COOL❄ /FAN✿).
4. **Temperature setting buttons**
   Changing the temperature setting.
5. **FAN speed button**
   Changing the fan speed.
6. **Swing/Air direction button *1**
   Use this button to set the auto swing or air direction to a specific angle.
7. UNIT **Unit Select button**
   When more than one indoor unit is operated by one remote control unit, this button is used to select a unit when adjusting the air direction.
8. **Timer setting buttons**
   (☞ Weekly Program Function)
9. **FILTER reset button**
   Use this button to reset the filter sign.
   When ▦ is displayed, press this button after cleaning the filter.
10. **Ventilation button**
    Use this button when you installed a fan available in the market. Pressing this button turns on and off the fan. When turning off the air conditioner, the fan will be also turned off.
    (While the fan is operating, ⌂ will appear in the display.)
    *If ⃠ is displayed on the LCD of the remote control unit when pressing the ventilation button, no fans are installed.
11. **Inspection button**
    Do not use this button.
12. **Sleeping button**
    (☞ Sleeping Function)
13. **Remote control sensor**
    Normally, the temperature sensor of the indoor unit is used to detect the temperature. However, it is also possible to detect the temperature around the remote control unit.

*1 Do not move the flap (vertical airflow adjustment board) with your hand.
- The flap is automatically directed down when the unit is stopped.
- The flap is directed up during the HEAT standby. The flap starts swinging after the HEAT standby is cancelled, although the AUTO flap indication on the remote control unit is displayed during the HEAT standby.

# 3. Timer Remote Controller

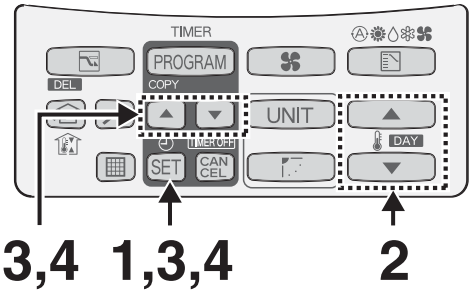
**Display Section** **(Refer to the page 3-26)**

1. SETTING **SETTING indication**
   Appears when the timer program is being set.
2. UNIT **UNIT indication**
   Indicates the unit No. of the indoor unit which is selected with the Unit Select button, or the unit in which an abnormality occurs.
3. TIMER No. **TIMER No. indication**
   Appears when the time program is being set.
4. **Timer program**
   : The indoor unit starts operation at the programmed time.
   : The indoor unit stops operation at the programmed time.
5. **Today's day of the week**
   Indicates today's day of the week.
6. **Program schedule indication**
   Appears under days that are scheduled for program operation.
7. **Present time**
   Displays the present time on a 24-hour clock. Also, displays settings in the various setting modes.
8. TIMER OFF **TIMER OFF indication**
   Displayed when the timer has been turned OFF.
9. ERROR **ERROR indication**
   Displayed when a mistake is made during timer setting.
10. **Outing indication (☞ Outing function)**
    Appears when the outing function is set.
11. **Upper and lower limit indication of the outing function**
    : Indicates the upper limit of the temperature
    : Indicates the lower limit of the temperature
12. **Operation Mode indication**
    Displays the selected operation mode. (AUTOⒶ /HEAT☼ /DRY◊ /COOL❄ /FAN ).
13. **Temperature indication**
    Indicates the set temperature.
14. **°F / °C temperature unit indication**
15. **Remote control sensor indication**
    Appears when the remote control sensor is used.
16. **Centralized control indication**
    Appears when operated in centralized control. If the remote control operation is not permitted to the remote unit, when the Start/Stop button, Mode Select button or Temperature setting button is pressed, flashes and rejects the change.
17. **Operation mode change control indication**
    Displays when an operation mode is entered by the remote control unit, while another operation mode has been already selected. This indicates that the operation mode cannot be changed.
18. **Disabled Feature indication**
    Displayed if the selected feature was disabled during installation.
19. **GHP operation standby indication**
    Appears during standby if a gas heat pump air conditioner is used.
20. **Heating standby mode indication**
    appears when the fan of the indoor unit is stopped or in low fan speed.
21. Ⓐ / / / **Fan mode select indication**
    The selected fan mode is displayed.
22. SWING **SWING indication**
    Appears while the flap swings.
23. **Flap position indication**
    Indicates the flap position.
24. **Filter indication**
    Appears when filter needs cleaning. Clean the filter.
25. **Inspection indication**
    Appears when the protective device is activated or when an abnormality occurs.
26. **Ventilation indication**
    Appears when a fan available in the market is installed and is operating.
27. **Oil indication**
    Appears when the engine oil needs to be changed. (Appears when the gas heat pump air conditioner is used.)
28. **Sleeping**
    Appears during the sleeping function.
29. ⚠ **CAUTION**
    Appears when the protective device is activated or when an abnormality occurs.
30. **Unit No. indication**
    Indicates the unit No. of the selected indoor unit.
31. TEST **TEST indication**
    Appears while in test operation.

3

# 3. Timer Remote Controller

## ■ Setting the Present Time




1. **Press and hold SET for more than 2 seconds to enter in the present day and time setting mode.**
   Once you enter in the setting mode, SETTING, "▼"(day) and "time" flash.
2. **Set "▼" to today's day of the week.**
   Press DAY *1 ▲ to move "▼" (flashing on the display) in the order of : Su → Mo → Tu → .... Press ▼ to move it in the order of : Su → St → Fr → ....
   *1 While in time setting mode, the temperature setting buttons function as DAY (changing day) button.
3. **Press ▲ ▼ to change the present "hour" in the range of 0 to 23*2.**
   Set the present hour and press SET.
   The "hour" digits light up, and the "minute" digits start flashing.
   *2 If the clock uses the 12 hours AM/PM setting, the hour is displayed in the range of AM 0 to 11/PM 0 to 11.
4. **Press ▲ ▼ , to change the present "minute" in the range of 0 to 59.**
   Set the present minute and press SET. The day and time are set and finishes the setting mode.

**Note**

- The unit returns to the normal mode if CANCEL is pressed or there is no operation made for 3 minutes during the setting. In this case, all the settings in progress will be lost.
- If the present time is invalid, "– – : – –" is displayed.
  If the power failure for more than 1 hour occurs, check if the set data of day and time are valid.

# 3. Timer Remote Controller

## ■ Weekly Program Function

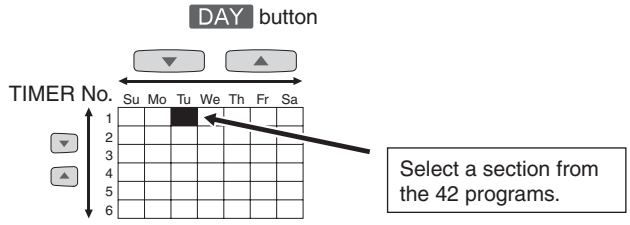
### Checking Weekly Timer

Set the weekly program assigning a given timer to each day of the week.
Maximum of 6 programs a day and 42 programs a week can be set.
Select the day and the TIMER number you want to program.

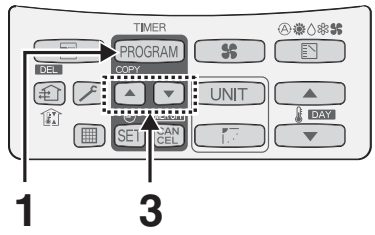
### Program image diagram

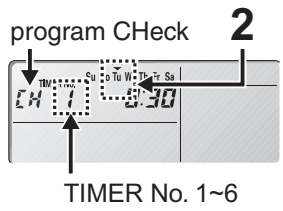
Vertical scale indicates the TIMER No., and horizontal scale indicates the day.

* If the day is changed, the TIMER No. returns to "1".




1. **Press PROGRAM to enter the program confirmation mode "CH" and start setting.**
   Once you enter the program confirmation mode, the present day is indicated as TIMER No. "1".
2. **Select the day.**
   Press DAY and ▲ / ▼ to move the "▼" horizontally on the day to select.
   Press ▲ to move "▼" (flashing on the display) in the order of : Su → Mo → Tu....
   Press ▼ to move it in the order of : Su → Sa → Fr....
   "– – : – –" is displayed when the program is not set.
3. **Select a Timer number.**
   Press ▲ / ▼ to select a TIMER No. from 1 to 6.
   Press ▲ to move up from 1.
   Press ▼ to move down from 6.

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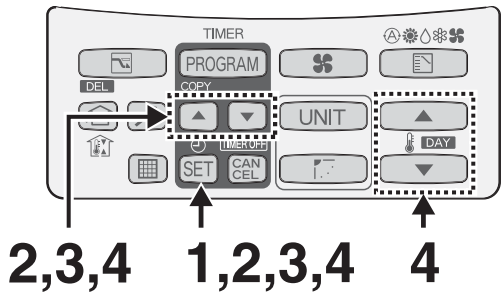
# 3. Timer Remote Controller

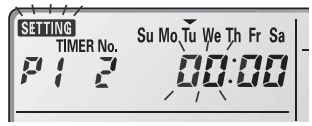
- Changing the Program Timer

To set the weekly program, follow the steps below.

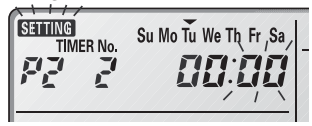
1. **Select the program you want to set in the program confirmation mode, and press SET. The enters the setting mode of the program currently displayed.**
   * In the program setting mode, SETTING, "hour", "minute" and "item" flash on the display.
2. **Set the "hour". (program step 1)**
   Press ▲ / ▼ to set the "hour".
   Confirm the "hour" and press SET. The enters the program changing mode P2 (setting of the "minute").
3. **Set the "minute". (program step 2)**
   Press ▲ / ▼ to set the "minute".
   Confirm the "minute" and press SET.The unit enters P3 (the program pattern selection mode).

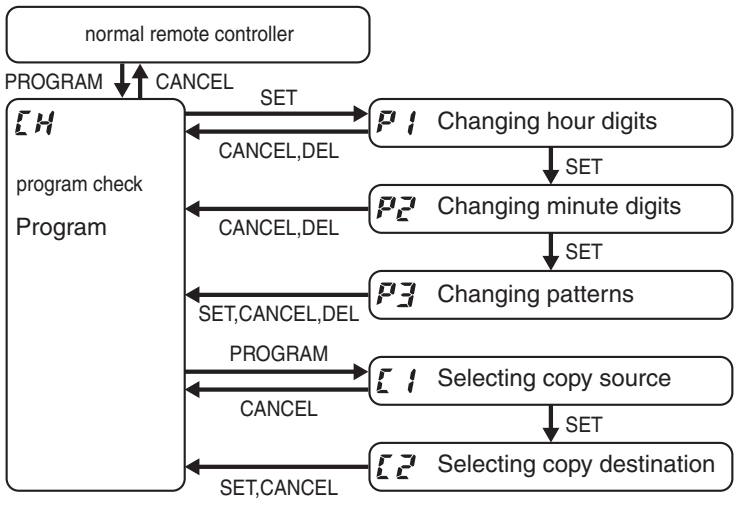



Program step1




Program step2



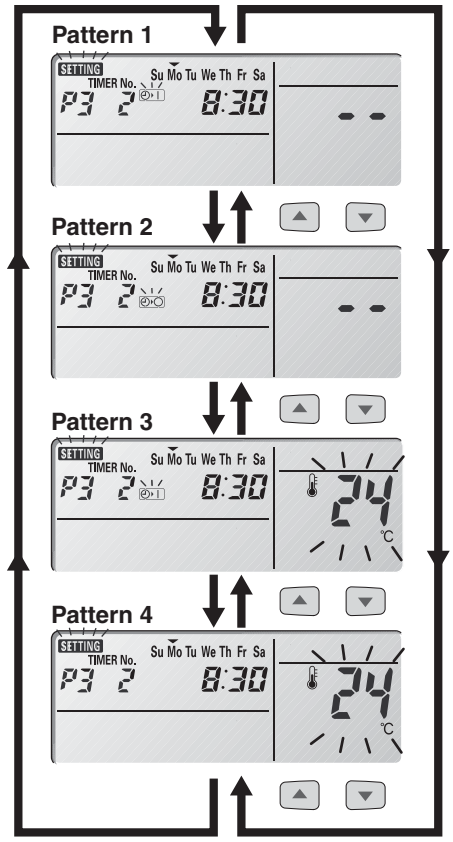

3

## ■ Weekly Program Function (Continued)

**4. Set the program pattern. (program step 3)**

There are 4 program patterns.

Pressing ▲ / ▼ repeats the following display patterns.




**Pattern 1**

The indoor unit starts operation at the programmed time.

**Pattern 2**

The indoor unit stops operation at the programmed time.

**Pattern 3**

The indoor unit starts operation at the programmed time and changes the temperature settings.

Press ▲ / ▼ to change the temperature setting.

**Pattern 4**

The indoor unit changes the temperature setting at the programmed time.

Press ▲ / ▼ to change the temperature setting.

Select the program pattern and press SET. The program timer setting is confirmed and the unit enters the confirmation mode CH.

**Note**

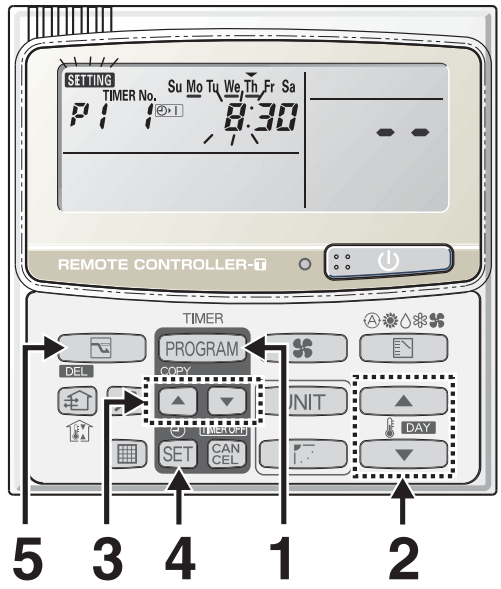
- If you press CANCEL during the setting, it returns to the program confirmation mode.
- If there is no operation made for 3 minutes during the setting, it returns to the normal mode. In this case, all the settings in progress will be invalid.

# 3. Timer Remote Controller

- **Deleting the Program Timer**

To delete the program timer setting, follow the steps below.

1. **Press PROGRAM to enter the program confirmation mode.**
2. **Press ▲ / ▼ to select the day of the program you want to delete.**
3. **Press ▲ / ▼ to select a TIMER No. (from 1 to 6).**
4. **Press SET to display the program setting mode P1.**
5. **Press DEL to delete the program.**




**Note**

- After deleting, the unit returns to the program confirmation mode CH.
- If you press CAN CEL during the setting, the unit returns to the program confirmation mode.
- If there is no operation made for 3 minutes during the setting, the unit returns to the normal mode.

- **Invalidating Program Timer**

If you want to adjourn the program operation for more than 1 week, you can invalidate all the timer settings.
Once the timer settings are invalidated, the program will not be operated until the invalidation is cancelled.

### <<How to invalidate the program timer>>

Press and hold TIMER OFF / CAN CEL for more than 2 seconds.
TIMER OFF is displayed and the programs will be invalidated from the next one.

### <<How to cancel the program timer invalidation>>

Press and hold TIMER OFF / CAN CEL for more than 2 seconds.
TIMER OFF disappears and the programs will be validated from the next one.

### If Power Failure Occurred

If the power recovers in a short time period, the program after the recovered time will be valid.
If the power recovered more than 1 hour after the failure, the present time information will be lost. In this case, the program will not be operated.

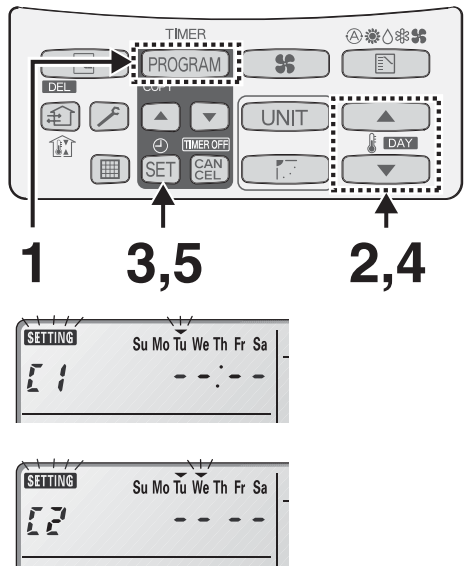
## ■ Weekly Program Function (Continued)

### ● Duplicating the Program Timer

You can duplicate the preset program by day.

**Select the copy source.**

1. If PROGRAM is pressed in program checking mode [H, it enters the copy mode (Selecting the copy source [ 1) of the program timer.
   While in the copy mode of the program timer, SETTING and ▼ (day) of the copy source flash on the display.
2. Press ▲ / ▼ to select the day of the copy source. Select the copy destination.
3. If SET is pressed in the mode of selecting the copy source [ 1, it enters the copy mode (Selecting the copy destination [2) of the program timer.
4. Press ▲ / ▼ to select the day of the copy source. Then, press SET to complete copying and return to the program checking mode.










**Note**

The program will be overwritten if the preprogrammed day is selected as a copy source.

### ● Before Asking Repair Work

Before asking repair work, please check the followings.

| Trouble | Possible Cause/Remedy |
|---|---|
| "ERROR" is displayed when the minute digits are entered. | If there is another TIMER No. which has the program of the same time and same day, you cannot overlap the setting. |
| The set data is not stored. | The stored programs are automatically sorted by the time. Check if the data is stored in the other TIMER No. |
| Program does not function. | Check if the time indication is not "– – : – –".<br>When the time is invalid, the program is also invalid. |
| | Check the remote controller prohibition inside.<br>In that case, the program is invalid. |

# 3. Timer Remote Controller

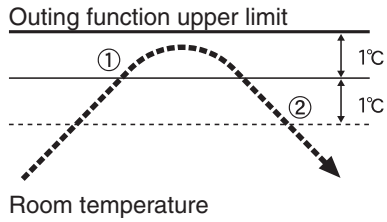
## ■ Outing Function

Outing function is a function that prevents the room temperature from increasing too much (or decreasing too much) when no one is in the room.
An air conditioner works automatically if this function is set effective.

### General Performance of the Outing Function

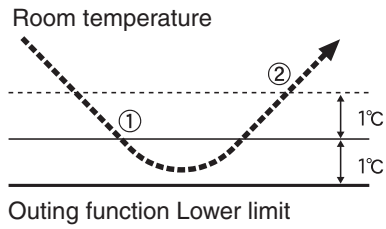
COOL / DRY

① The air conditioner starts operation when the room temperature increases up to –1°C of the upper limit.
② The air conditioner stops operation when the room temperature decreases up to –2°C of the upper limit.




HEAT

① The air conditioner starts operation when the room temperature decreases up to +1°C of the lower limit.
② The air conditioner stops operation when the room temperature increases up to +2°C of the lower limit.

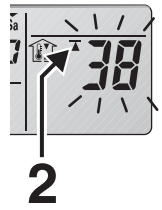


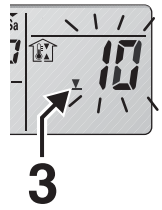

**[Precautions]**

- The outing control only starts/stops the air conditioner. It does not change the operation mode/temperature setting. Therefore, the operation mode/temperature needs to be set beforehand so that the outing function turns on the air conditioner with your desired operation mode/ temperature setting.
- If the room temperature rapidly changes, the room temperature may get over the upper or lower limit when the outing function is activated.
- The outing function is invalid during FAN/AUTO operation mode.
- The air conditioner's stop order (stated in ② /above) is valid only when the outing function is operated.
  If operated using other remote control unit (or a centralized control device such as a system control), the outing function does not work.

# 3. Timer Remote Controller

## ■ Outing Function (Continued)




### ● Setting the Outing Function

**1. Press and hold for more than 2 seconds to display the upper limit temperature setting screen.**
, and the upper limit temperature start flashing.
(The default value of the upper limit temperature is 38 °C.)

**2. Press / to select the upper limit temperature and press SET to fix the value. The lower limit temperature setting screen is displayed.**

**3. Press / to select the lower limit temperature, and press SET to fix the value. The outing function setting is completed. (The default value of the lower limit temperature is 10 °C.)**

* The unit returns to the normal mode if CANCEL is pressed or there is no operation made for 3 minutes during the setting. In this case, all the settings in progress will be lost.

### ● Canceling the outing function

Press and hold for more than 2 seconds while the outing function is set.

### ● Outing function indication

| Outing function indication | Status |
|---|---|
| Off | The outing function is not set. |
| Flashing | The outing function is now being set, or under operation. |
| Lighting | Although the outing function is set, not under operation. |

**Note**

A remote controller loses outing function operation information when it is cut for more than one hour during the outing function operation by electricity. It reverts from the blackout, and an air conditioner does not drive in outing function when operation is started. At this time, an air conditioner does not stop at outing function.

# 3. Timer Remote Controller

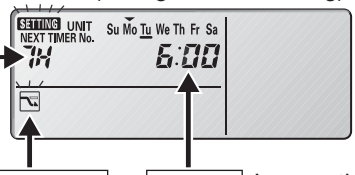
## ■ Sleeping Function

* This function leads you to a comfortable sleep and changes the room temperature during your sleep.

* You can set the off timer every one hour from 1 to 10 hours.

Operating time

Display of remote control unit (during the time setting)




Sleeping function indication

Off time

In case the present time is 23:00.

Display of remote control unit (during sleeping function setting)

Sleeping function indication

* If no operation is made for 3 minutes, the time setting mode will be automatically finished.

**Ex.** In case of 7 hours timer

1. Press [ ].

● Each time the button is pressed, the indication changes in the following order.

7H → 6H → ····· → 1H → 10H → ····· → 8H

(every one hour)

(Press CANCEL to stop the time setting.)

2. Press SET.

● The sleeping operation starts.

When the off time comes:

● The indoor unit stops.

* The temperature returns to the setting at the time when sleeping function operation started.

To cancel the sleeping function operation:

● Press [ ].

* The temperature setting remains at the time cancelled.

● The following buttons also cancel the sleeping function operation.

[ ] button

Stop the indoor unit after the sleeping function operation is cancelled.

[ ] button

Changes the operation mode after the sleeping function operation is cancelled.

3

## ■ Sleeping Function (Continued)

- **If [button] button does not work.**

**Or if the operation does not start even if [SET] is pressed.**

**Check the following table.**

| Item | Display of the remote control unit (Lighting/flashing indication) | Contents |
|---|---|---|
| 1 | [ERROR] The Error indication flashes (for several seconds). | The clock is not set. |
| 2 | ⃠ "This function is not available" indication lights up (for several seconds). | When the operation mode is set to AUTO or FAN, this function is not available. |
| 3 | Centralized control indication flashes (for several seconds). | The centralized control device is prohibited from starting/ stopping the unit or change the temperature setting. |

**The sleeping function operation will be cancelled in the following cases:**

1: When the unit is operated to stop or change the temperature setting by the other remote control unit or centralized control device.

2: When the unit is operated to stop or change the temperature setting with the weekly program function / outing function.

3: When the centralized control unit is prohibited from stopping the unit or changing the temperature setting.

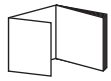
**Note**

| Trouble | Possible Cause/Remedy |
|---|---|
| The temperature setting does not decrease (increase). | The temperature over the upper or lower limit or each operation mode cannot be set. |
| Operation under the sleeping function does not finish. | Note if you change the time after the sleeping function started. The operation does not finish until it reaches to the set starting time. |

# 3. Timer Remote Controller

## ■ INSTALLATION MANUAL FOR TIMER REMOTE CONTROLLER

Accessories for remote controller switch

| ① Remote controller | ② Wood screws | ③ Wire joints | ④ Operation manual | ⑤ Installation manual |
|---|---|---|---|---|
| (with 200mm wire) | | |  | |

## ■ How to install the remote controller

- Do not supply power to the unit or try to operate it until the tubing and wiring to the outdoor unit is completed.
- Do not twist the control wiring with the power wiring or run it in the same metal conduit, because this may cause malfunction.
- Install the remote controller away from sources of electrical noise.
- Install wiring correctly(incorrect wiring will damage the equipment).
- Install a noise filter or take other appropriate action if electrical noise affects the power supply circuit of the unit.
- When wiring, do not connect the remote controller wires to the adjacent terminal block for the power wiring. Otherwise, the unit will break down.
- Use shielded wires for remote control wiring and ground the shield on indoor unit sides. (Fig. 3-29) Otherwise misoperation due to noise may occur.

The mounting position for the remote controller should be located in an accessible place for control.
Never cover the remote controller or recess it into the wall.

(1) When you open the decorative cover (Fig. 3-32), you will see 2 gaps under the remote controller. Insert a coin into these gaps and pry off the back case.

(2) Attach the back case with the 2 wood screws ② provided. Using a screwdriver, push open the cut-outs on the back case. These holes are for screws. (Fig. 3-33)

(3) Connect the remote controller wiring (2 wires) correctly to the corresponding terminals in the electrical component box of the indoor unit.

(4) To finish, fit the back tabs of the case into the remote controller and mount it.

■ Basic Wiring Diagram

● Connection diagram

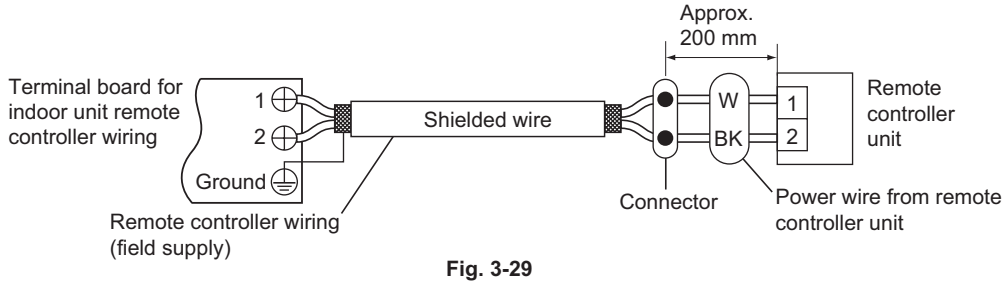



**Fig. 3-29**

3

# 3. Timer Remote Controller

- Use 0.5mm$^2$ - 1.25mm$^2$ wires.
  Remote controller wiring can be extended to a maximum of 500m.

(1) Strip the insulation to approximately 14 mm from the ends of the wires that will be connected.

(2) Twist together the 2 wires and create a crimp connection at the wire joint.

(3) If a special crimping tool is not used, or if the connection is soldered, insulate the wires using insulation tape.

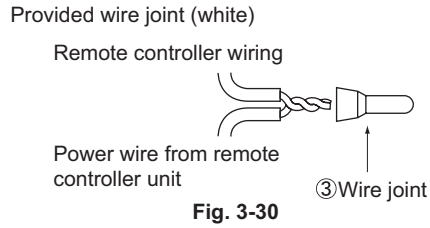



**Fig. 3-30**

## ■ Group control using 2 remote controllers

It does not matter which of the 2 remote controllers you set as the main controller. When using multiple remote controllers (up to 2 can be used), one serves as the main remote controller and the other as the sub-remote controller.

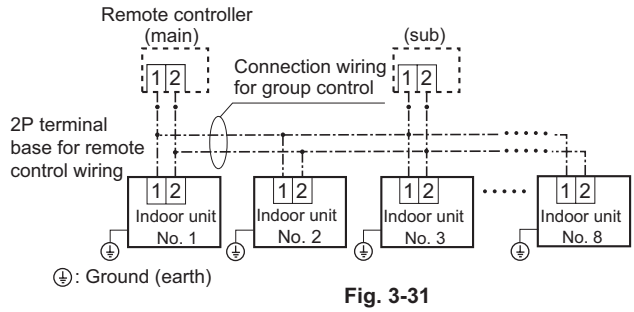



**Fig. 3-31**

## ■ Remote controller setting mode

To set the remote controller main/sub setting or change the sensor, follow the steps below.

①Press both [▣] and [SET] buttons on the remote controller for more than 4 seconds together.

②Select CODE No. with [▲] / [▼] ([🌡]) buttons.

③Change DATA with [▲] / [▼] (TIMER) buttons.

④Press [SET] . Finally, press [🔧] .

* DATA is memorized in the RCU. (DATA setting will not be changed even when the power is turned off.)

* Make sure to set [Normal] for RCU. CK.

| CODE ITEM | ITEM | DATA | |
|---|---|---|---|
| | | 0000 | 0001 |
| 01 | RCU. Main/Sub | Sub | Main |
| 02 | Clock display | 24 hours | 12 hours (AM/PM) |
| 08 | RCU. CK | RCU. CK | Normal |
| 0A | Room temperature sensor | Main unit | RCU |

## ■ Indoor unit setting mode

To select the ventilation setting or change the temperature unit, follow the steps below.

①Press [🔧] + [SET] + [CANCEL] buttons on the remote controller for more than 4 seconds together.

②Select CODE No. with [▲] / [▼] ([🌡]) buttons.

③Change DATA with [▲] / [▼] (TIMER) buttons.

④Press [SET] . Finally, press [🔧] .

* DATA is memorized in the indoor unit. (DATA setting will not be changed even when the power is turned off.)

| CODE ITEM | ITEM | DATA | |
|---|---|---|---|
| | | 0000 | 0001 |
| 31 | Vent. button | No | Yes |
| 33 | Temperature unit | °C | °F |

## ■ To display the sensor temperature:

- Press both [CANCEL] and [🔧] buttons on the remote controller for more than 4 seconds together.
- Change the sensor address (CODE No.) with [▲] / [▼] ([🌡]) buttons.
- Select the UNIT No. which you want to call with the [UNIT] button.
- Press the [🔧] button to finish service mode.

## To display the trouble history:

- Press both [SET] and [🔧] buttons on the remote controller for more than 4 seconds together.
- Change the alarm message: [▲] / [▼] ([🌡]) buttons
- Press the [🔧] button to finish service mode.

CODE No. 01→04
(New) (Old)

# 3. Timer Remote Controller

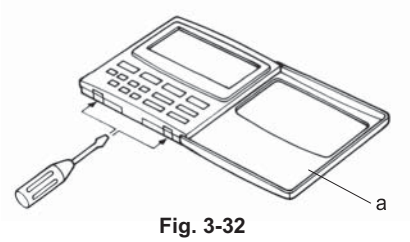



**Fig. 3-32**

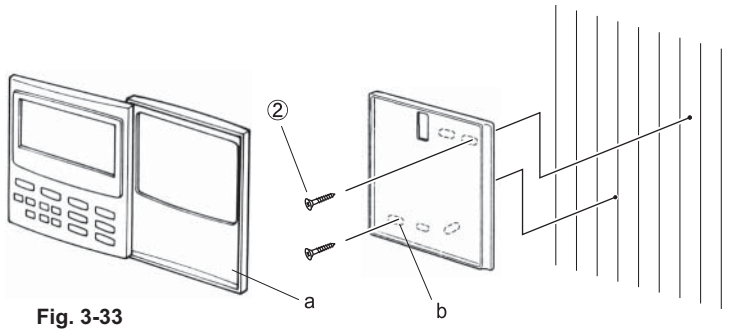


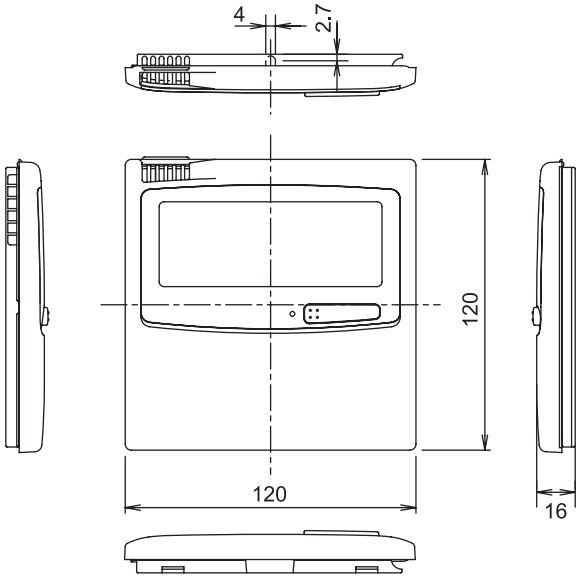

**Fig. 3-33**

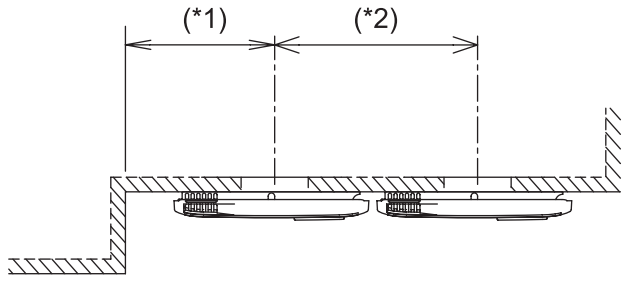
Caution when installing the remote controller

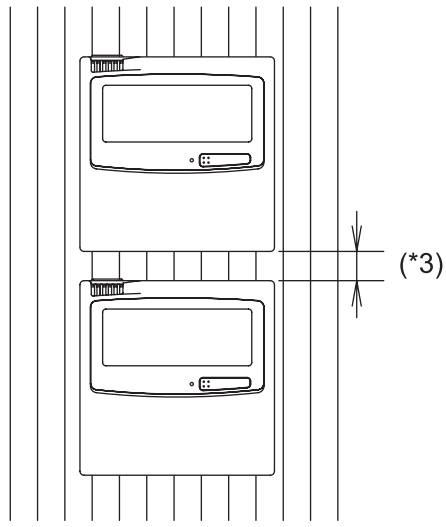
*1 Install the remote controller more than 95 mm apart from the wall surface.

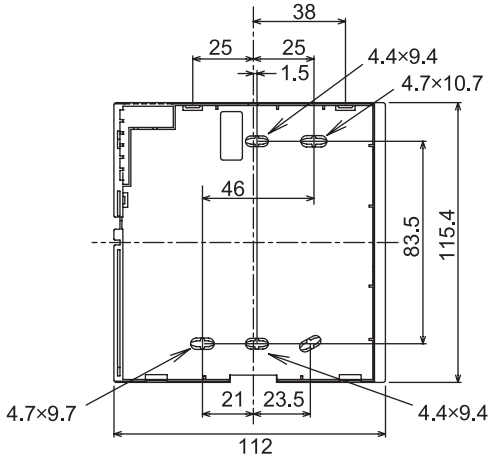
*2 To install the remote controllers side-by-side, keep the space between each for more than 125 mm.

*3 To install the remote controllers one above the other, keep the space between each for more than 25 mm.



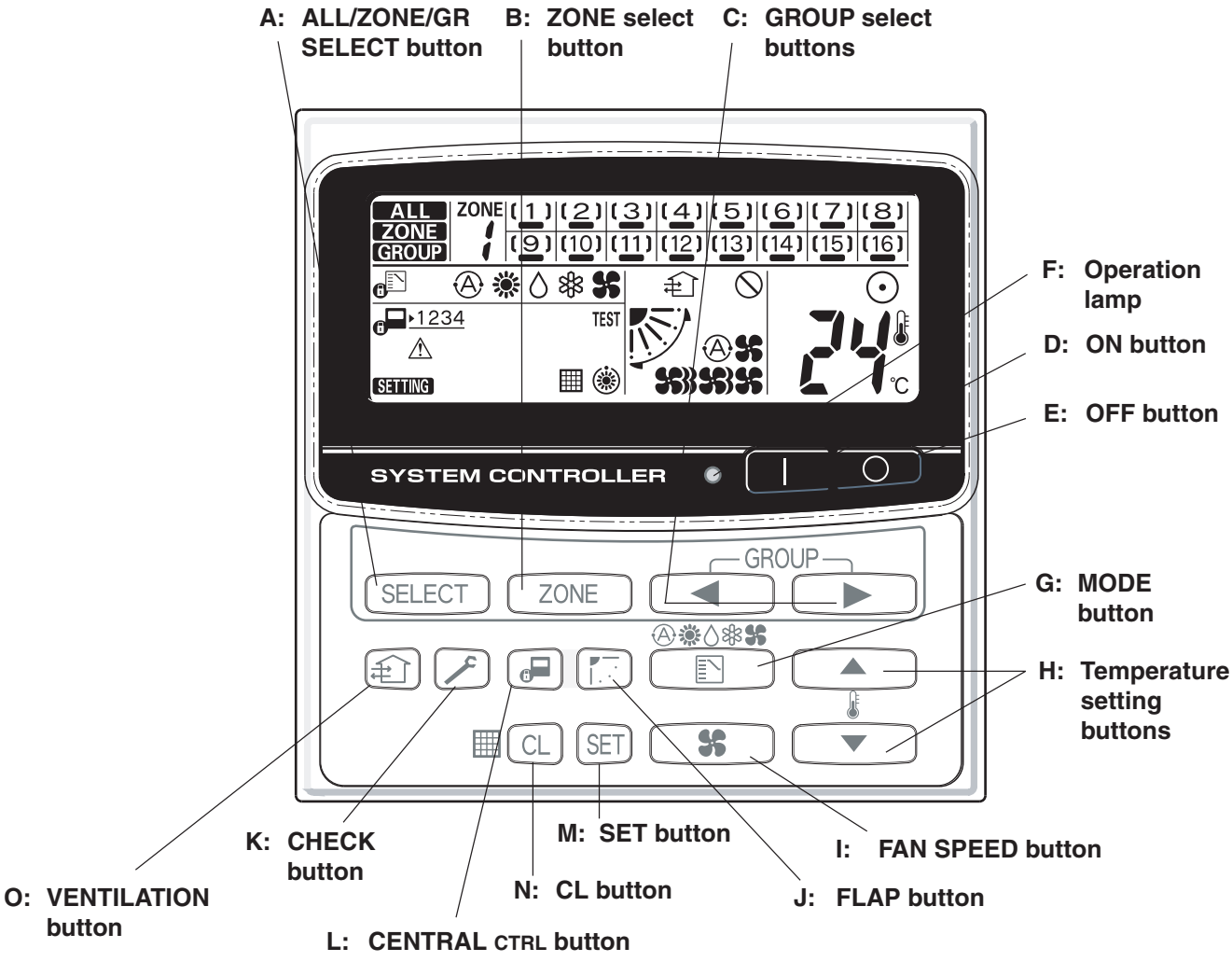



# 4. System Controller

**System Controller / SHA-KC64AG**

## ■ Operation Buttons




| | |
|---|---|
| **A: ALL/ZONE/GR SELECT button**<br>SELECT<br>ALL<br>ZONE1 GR1 UNIT UNIT<br>GR2 UNIT<br>GR3 UNIT<br>ZONE2 GR1 UNIT UNIT UNIT<br>GR2 UNIT<br>GR3 UNIT | Use this button to select one of the following:<br>**ALL:** Used for turning all the air conditioners on and off.<br>**ZONE:** Used for turning all the air conditioners of each zone on and off.<br>**GR:** Used for turning all the air conditioners of each group on and off.<br>NOTE **A maximum of 4 zones and 16 groups (units) in a zone can be set.** |
| **B: ZONE select button** ZONE | Use this button to select a zone (1 to 4) to operate individually. |
| **C: GROUP select buttons** ◀ ▶ | Use these buttons to select a group (1 to 16) to operate individually. |

Continued

# 4. System Controller

| | |
|---|---|
| **D: ON button** | This button is for turning the selected air conditioner on. |
| **E: OFF button** | This button is for turning the selected air conditioner off. |
| **F: Operation lamp** | This lamp lights when the unit is turned on. |
| **G: MODE button** | Use this button to select one of the following 5 operations: |
| **(AUTO)** | Ⓐ: Used to automatically set cooling or heating operation.<br>**Only for heat pump type**<br>(Temperature range: 17 to 27°C) |
| **(HEAT)** | ☼: Used for normal heating operation.<br>**Only for heat pump type**<br>(Temperature range: 16 to 26°C) |
| **(DRY)** | ♢: Used for dehumidifying without changing the room temperature.<br>(Temperature range: 18 to 30°C) |
| **(COOL)** | ❄: Used for normal cooling operation.<br>(Temperature range: 18 to 30°C) |
| **(FAN)** | : Used to run the fan only, without heating or cooling operation. |
| **NOTE** | When the indication is displayed, you cannot change the mode from ❄ and ♢ or ☼ to ☼ or ❄ and ♢. To change the mode, turn off all units once then select the mode again. |
| **H: Temperature setting buttons** | : Press this button to increase the temperature setting.<br>: Press this button to decrease the temperature setting. |
| **I: FAN SPEED button** | |
| **(AUTO)** | Ⓐ: The air conditioner automatically decides the fan speed. |
| **(HI)** | : High fan speed |
| **(MED)** | : Medium fan speed |
| **(LO)** | : Low fan speed |
| **J: FLAP button** | 1. Use this button to set the airflow direction to a specific angle.<br>The airflow direction is displayed on the remote control unit.<br>Operation mode — Number of airflow direction settings<br>❄ (COOL) or ♢ (DRY) — 3<br>☼ (HEAT) or (FAN) — 5<br>Ⓐ (AUTO)<br>Cooling mode: 3<br>Heating mode: 5 |
| **CAUTION** | **In the Cool mode and Dry mode, when the flaps are set in a downward position, condensation may form and drip around the vent.**<br>**Do not move the flap with your hands.** |
| **NOTE** | This function is available only for models X, T and LD. |
| **( )** | 2. Use this button to make the airflow direction sweep up and down automatically.<br>Press this button several times until the ( ) symbol appears on the display. |
| **NOTE** | This function is available only for models X, K, T and LD. |
| **NOTE** | 1) The flap setting can be performed only for units that have no remote controllers.<br>2) In the ALL or ZONE mode, no flap setting can be performed. If necessary, you should select the GR mode and use the FLAP button. |

3

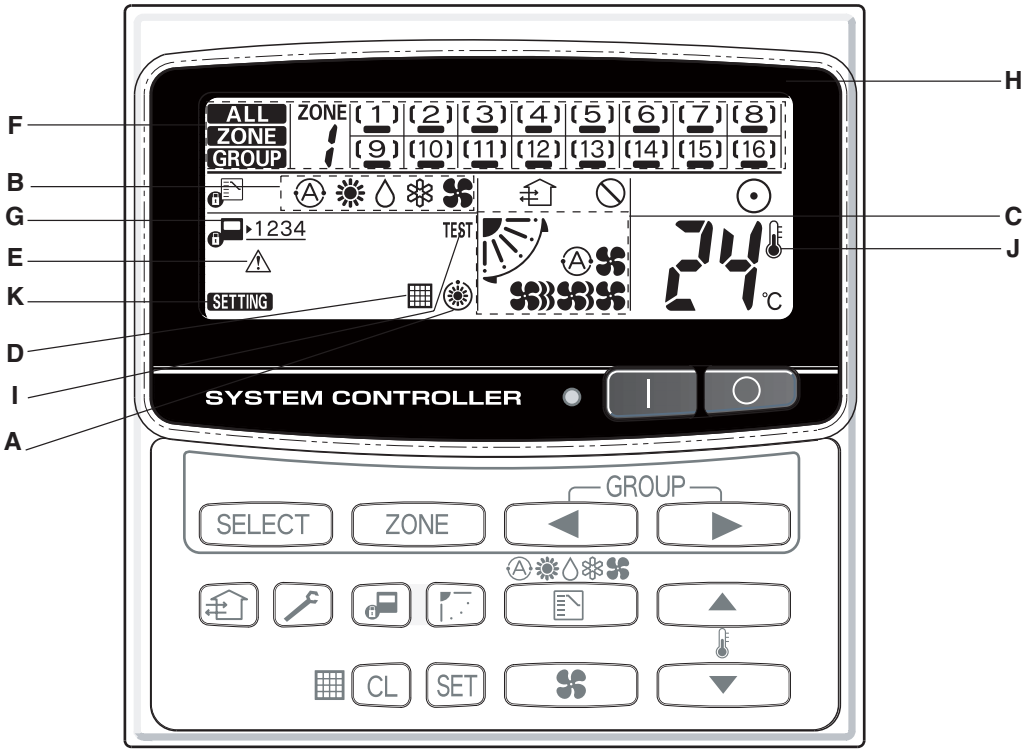
# 4. System Controller

| | |
|---|---|
| **K: CHECK button**<br> <br>**CAUTION** | This button is used only when servicing the air conditioner.<br>**Do not use the CHECK button for normal operation.** |
| **L: CENTRAL CTRL button** | Use this button to inhibit individual operation by remote controller as follows:<br>1234<br>1: Individual ON/OFF operation is inhibited.<br>2: Individual ON/OFF, MODE and Temperature setting operation is inhibited.<br>3: Individual MODE and Temperature setting operation is inhibited.<br>4: Individual MODE operation is inhibited.<br>No indication: Central control is cleared. (Individual operation) |
| **M: SET button**<br>**NOTE** | This button is used for setting indoor unit's address when installing the air conditioner.<br>**Do not use the SET button for normal operation.** |
| **N: CL button** | Use this button to reset the filter sign.<br>The air conditioner has the timer for the filter and informs you when the filter needs cleaning |
| **O: VENTILATION button** | This is used when a ventilation fan (available commercially) is connected. Pressing the VENTILATION button turns the fan on and off. The ventilation fan also turns on and off when the air conditioner unit is turned on and off. (The display of the remote control unit shows " " while the ventilation fan is running.)<br>* If " " is shown on the display of the remote control unit when the VENTILATION button is pressed, this indicates that the ventilation fan is not connected. |

3

# 4. System Controller

## ■ Display




### Description

**A:** When the unit is in heating standby status, the ❁ indicator appears.

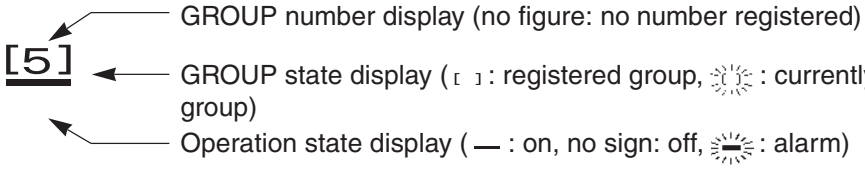
**B:** The currently selected operation mode is displayed.

**C:** The currently selected FAN SPEED, Airflow Direction and SWEEP settings are displayed.

**D:** This indication appears when the filter needs cleaning.

**E:** This indication appears only when an abnormality occurs within a unit.

**F:** The currently selected mode (ALL, ZONE or GROUP), ZONE number and GROUP number are displayed.




**G:** The currently selected central control mode (1, 2, 3 or 4) is displayed.

**H:** Lights when any of the air conditioners under the system control is operating; turns off when none of the air conditioners under the system control is operating. Blinks when any conditioner is operating under abnormal conditions and its protection function is working.

**I:** When the 🔧 button is pressed for more than 4 seconds, the TEST indicator appears.

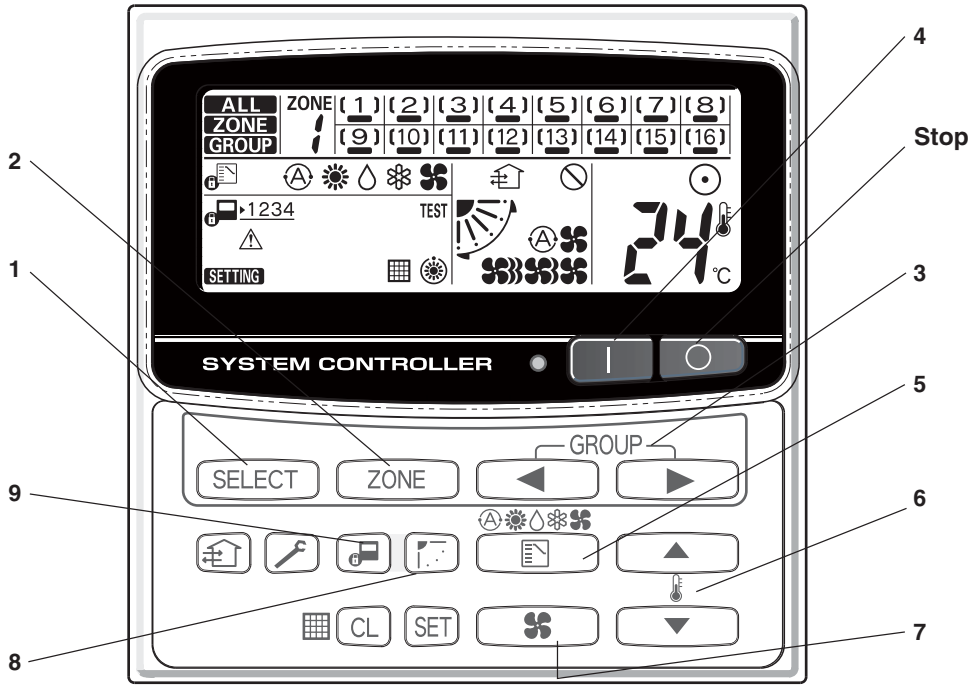
**J:** This indication appears when the temperature is set.

**K:** When turning on the power switch of the system controller, SETTING sign blinks for a few minutes. While blinking, any controls using the system controller are inhibited. This is because the system controller is verifying connected groups.

# 4. System Controller

## ■ How to Start Group Operation

To start group operation



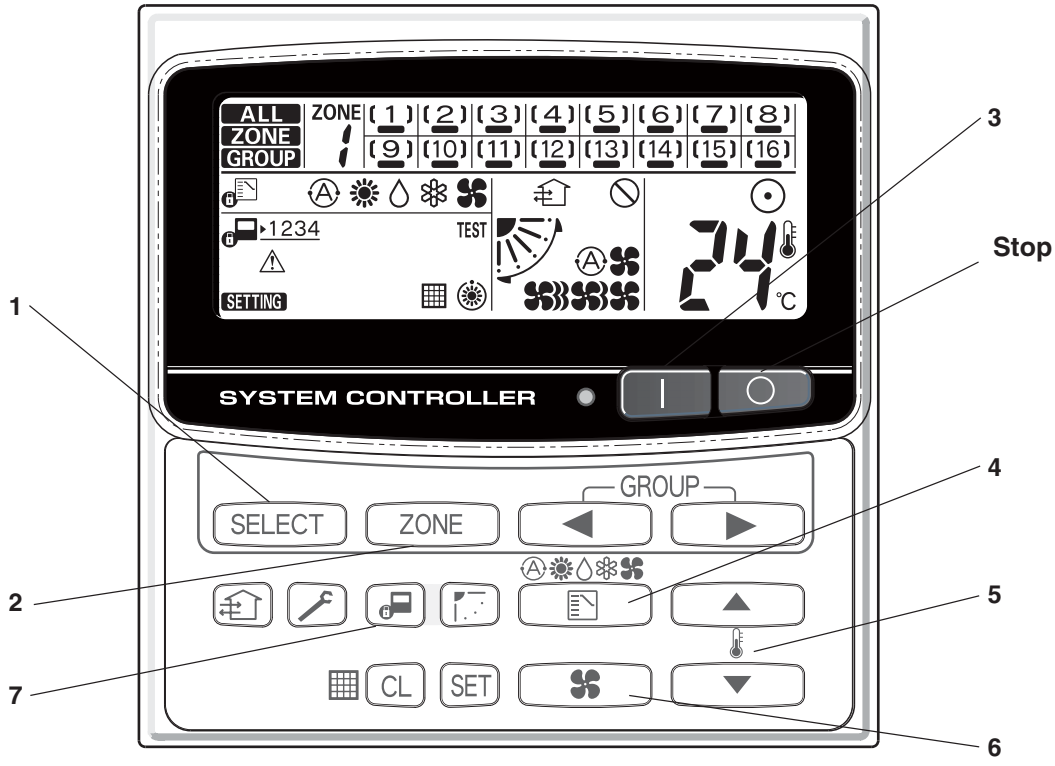

| | |
|---|---|
| **Power** | Turn the power supply switch on more than 5 hours before starting operation. |
| **1** SELECT | Press the SELECT button and select GROUP. |
| **2** ZONE | Select the ZONE No. including the group to be operated by pressing ZONE button. |
| **3** ◄ ► | Select the GROUP No. to be operated by pressing GROUP select buttons ◄►. |
| **4** | Press the ON button. |
| **5** | Set the operation mode by pressing the MODE button. |
| **6** | Set the desired temperature by pressing one of the temperature setting buttons ▲▼. |
| **7** | Set the desired fan speed by pressing the FAN SPEED button. |
| **8** | Set the airflow direction to a specific angle or sweep mode. |
| **9** | By pressing , select your desired setting.<br>Individual : Controls with the remote controller are possible.<br>Central 1 : Individual ON/OFF operation with the remote controller is inhibited.<br>Central 2 : Individual ON/OFF, MODE, and Temp. setting operations with the remote controller are inhibited.<br>Central 3 : Individual MODE and Temp. setting operations with the remote controller are inhibited.<br>Central 4 : Individual MODE operation with the remote controller is inhibited.<br>Under Central/Individual settings other than listed above, “CENTRAL” is displayed. |
| **AUTO Operation** | Depending on the difference between the temperature setting and the room temperature, heating and cooling alternate automatically so that a uniform room temperature is maintained. |
| **Stop** | Confirming the GROUP No. to be selected, press the OFF button. |

**NOTE** The flap setting can be performed only for units that have no remote controllers.

# 4. System Controller

## ■ How to Start Collective Operation

To start collective operation (ALL or ZONE)




| | | |
|---|---|---|
| **Power** | | Turn the power supply switch on 5 hours or more before starting operation. |
| **1** | SELECT | Press the SELECT button and select ALL or ZONE.<br>In case of ZONE collective operation. |
| **2** | ZONE | Select the ZONE No. to be operated by pressing ZONE button. |
| **3** | I | Press the ON button. |
| **4** | | Set the operation mode by pressing the MODE button. |
| **5** | ▲<br>▼ | Set the desired temperature by pressing one of the temperature setting buttons ▲ ▼. |
| **6** | | Set the desired fan speed by pressing the FAN SPEED button. |
| **7** | | Select the control mode. |
| **Stop** | ○ | Confirming the ZONE No. to be selected or ALL indication, press the OFF button. |

**NOTE** In the ALL or ZONE mode, no flap setting can be performed. If necessary, you should select the GR mode and use the FLAP button.

# 4. System Controller

## ■ How to Install the System Controller

Installation site selection

- Install the system controller at a height between 1 and 1.5 meters above the floor.
- Do not install the system controller in a place where it will be exposed to direct sunlight or near a window or other place where it will be exposed to the outside air.
- Be sure to install the system controller vertically, such as on a wall.

---

**CAUTION**

- **Do not twist the control wiring together with the power wiring or run it through the same metal conduit, because this may cause a malfunction.**
- **Install the system controller away from sources of electrical noise.**
- **Install a noise filter or take other appropriate action if electrical noise affects the power supply circuit of the unit.**

**WARNING**

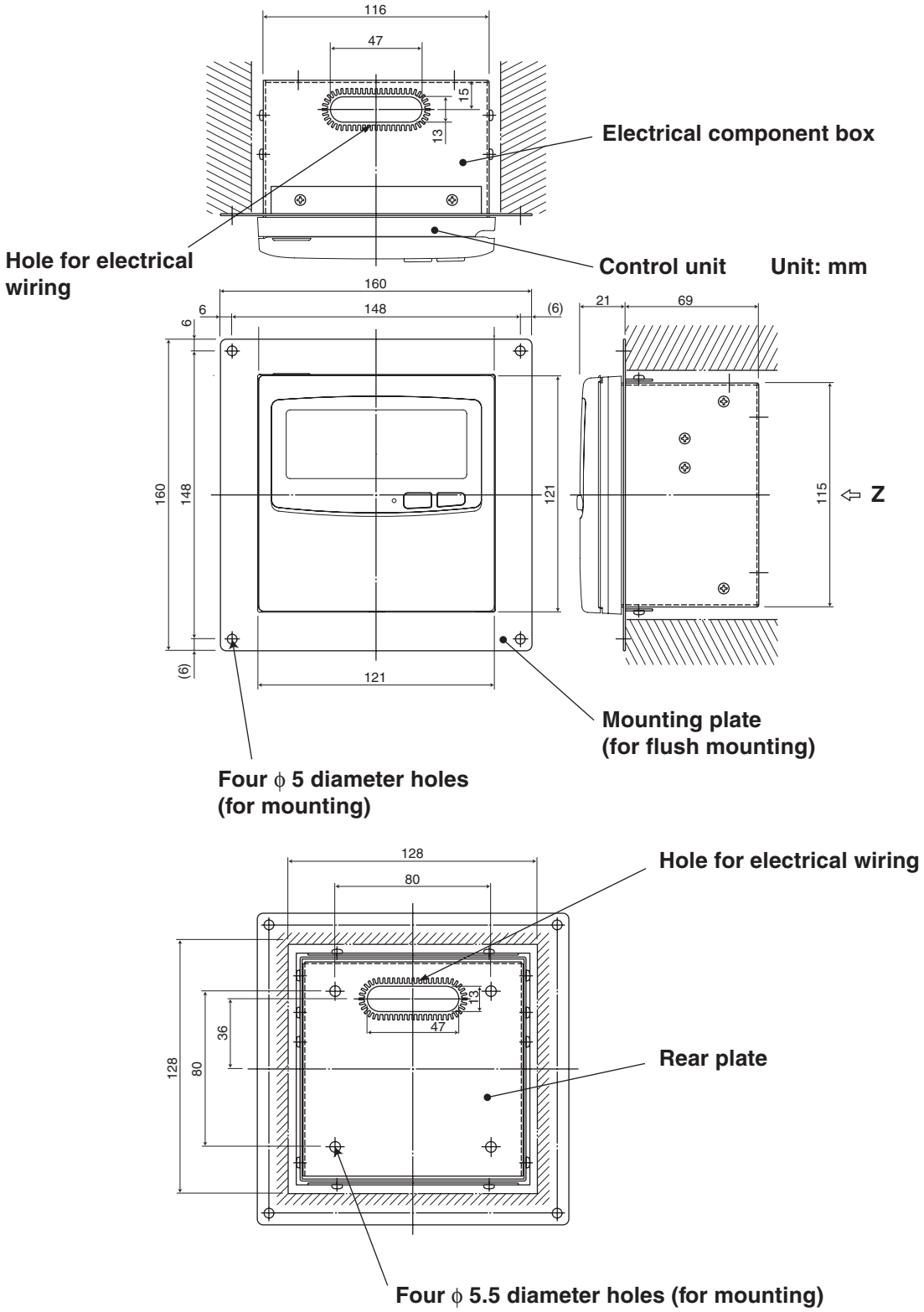
**Do not supply power to the unit or try to operate it until the tubing and wiring to the outdoor unit is completed.**

| Part Name | Figure | Q'ty | Remarks |
|---|---|---|---|
| System controller | | 1 | |
| Tapping screw | Truss-head Phillips 4 × 16 mm | 4 | For securing the system controller |
| Rawl plug | | 4 | For securing the system controller |
| Manual | | 1 | For installation |
| | | 1 | For operation |

3

# 4. System Controller

## ■ Overview of the System Controller

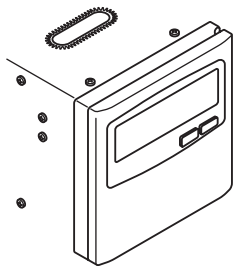



* In order to mount the system controller flush with the wall, an opening measuring 128 mm x 128 mm is necessary.

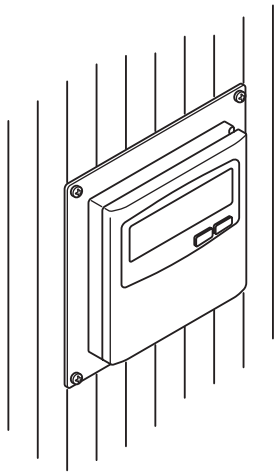
**Fig. 3-34**

# 4. System Controller

## ■ Installation Procedure



**a): Normal mounting**



**b): Flush mounting**

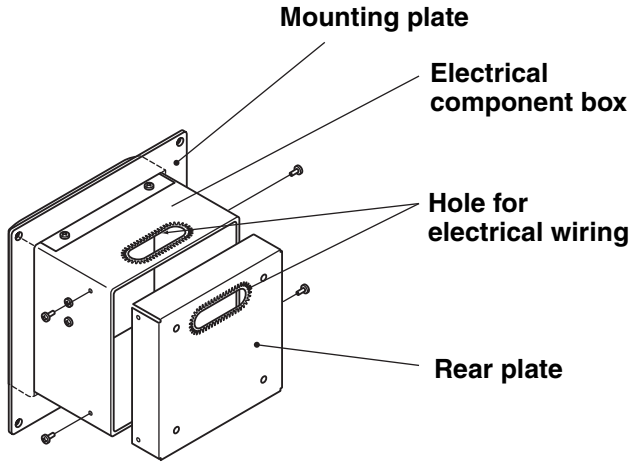
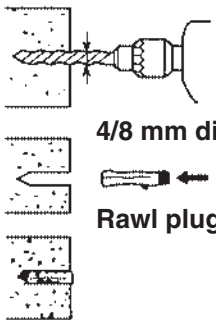



**Fig. 3-35**

1. Decide how the system controller will be mounted: in the normal manner or flush with the wall.
   a) To mount the system controller in the normal manner, remove the mounting plate. Then reattach the 4 screws to the electrical component box.
   b) To mount the system controller flush with the wall, make an opening in the wall measuring 128 mm x 128 mm. The opening must be at least 85 mm deep as measured from the outside surface of the wall.

2. Remove the rear plate and connect the electrical wiring.
   1) Remove the 4 screws located on both sides of the rear plate.
   2) Either the hole in the top of the electrical component box or the hole in the rear plate may be used to feed the electrical wiring.
   3) If the hole on top is used, the rear plate should be turned upside down.

3. Secure the system controller in place.
   a) If the system controller is being mounted in the normal manner, first attach the rear plate to the wall using the screws and Rawl plugs provided. Next, place the body of the system controller over the rear plate and secure it in place using four screws.
   b) If the system controller is being mounted flush with the wall, fit it through the mounting plate on the wall and secure it in place using the screws and Rawl plugs provided.

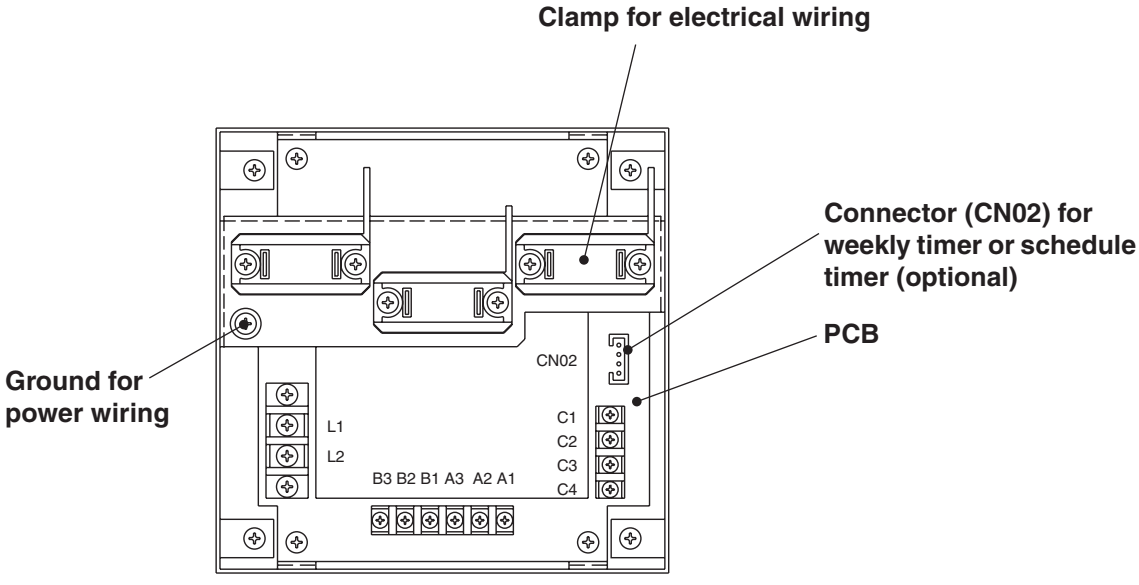


**4/8 mm dia. holes**

**Rawl plug**

**NOTE** To mount the system controller on a wall made of cinder block, brick, concrete, or a similar material, drill 4.8 mm diameter holes in the wall and insert Rawl plugs to anchor the mounting screws.

### ■ Layout of Electrical Terminals




**How to connect electrical wiring**

1) Basic wiring
   - L1: / L2: ] Power supply (∿50 Hz/60 Hz, 220 - 240 VAC)
   - C1: / C2: ] Inter-unit control wiring (Low voltage)
   - C3: Auxiliary
   - C4: Ground for inter-unit control wiring

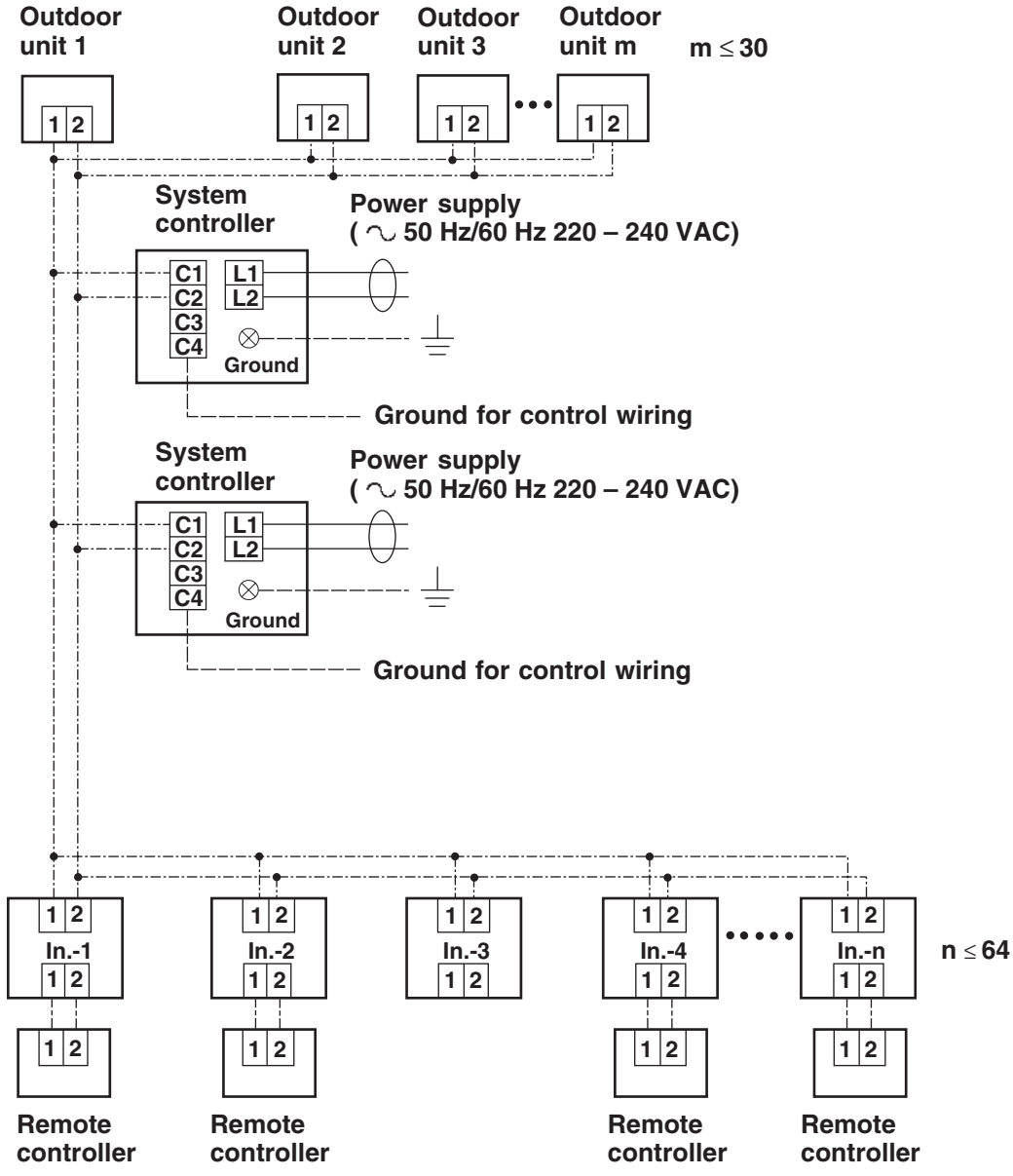
2) Terminals for remote monitoring
   - A1: Input for turning ON air conditioners concurrently
   - A2: Input for turning OFF air conditioners concurrently
   - A3: Common input for turning air conditioners ON or OFF
   - B1: On operation state indicator output
   - B2: Alarm indicator output
   - B3: Common indicator output

**Fig. 3-36**

# 4. System Controller

## ■ Basic Wiring Diagram

**CAUTION** **Ensure that wiring connections are correct. (Incorrect wiring will damage the equipment.)**

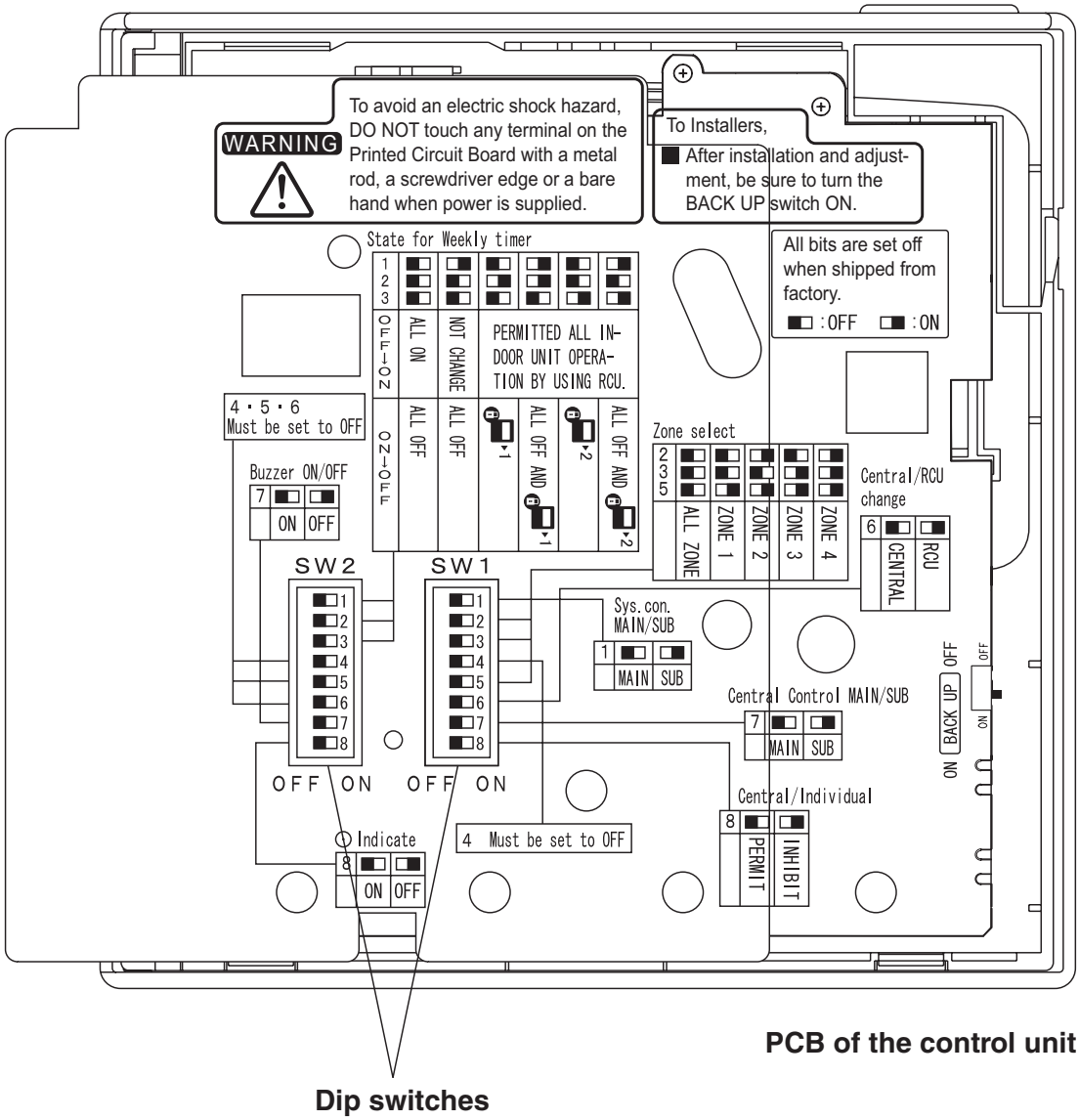



**NOTE** **1.** Lines consisting of dots and dashes ( ▬·▬·▬ ) indicate inter-unit control wirings.
**2.** In. means indoor unit.
**3.** Up to 2 system controllers may be connected to 1 control line system.

**Fig. 3-37**

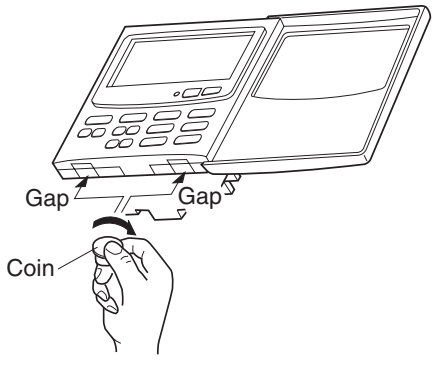
# 4. System Controller

## ■ Address Switch Setting



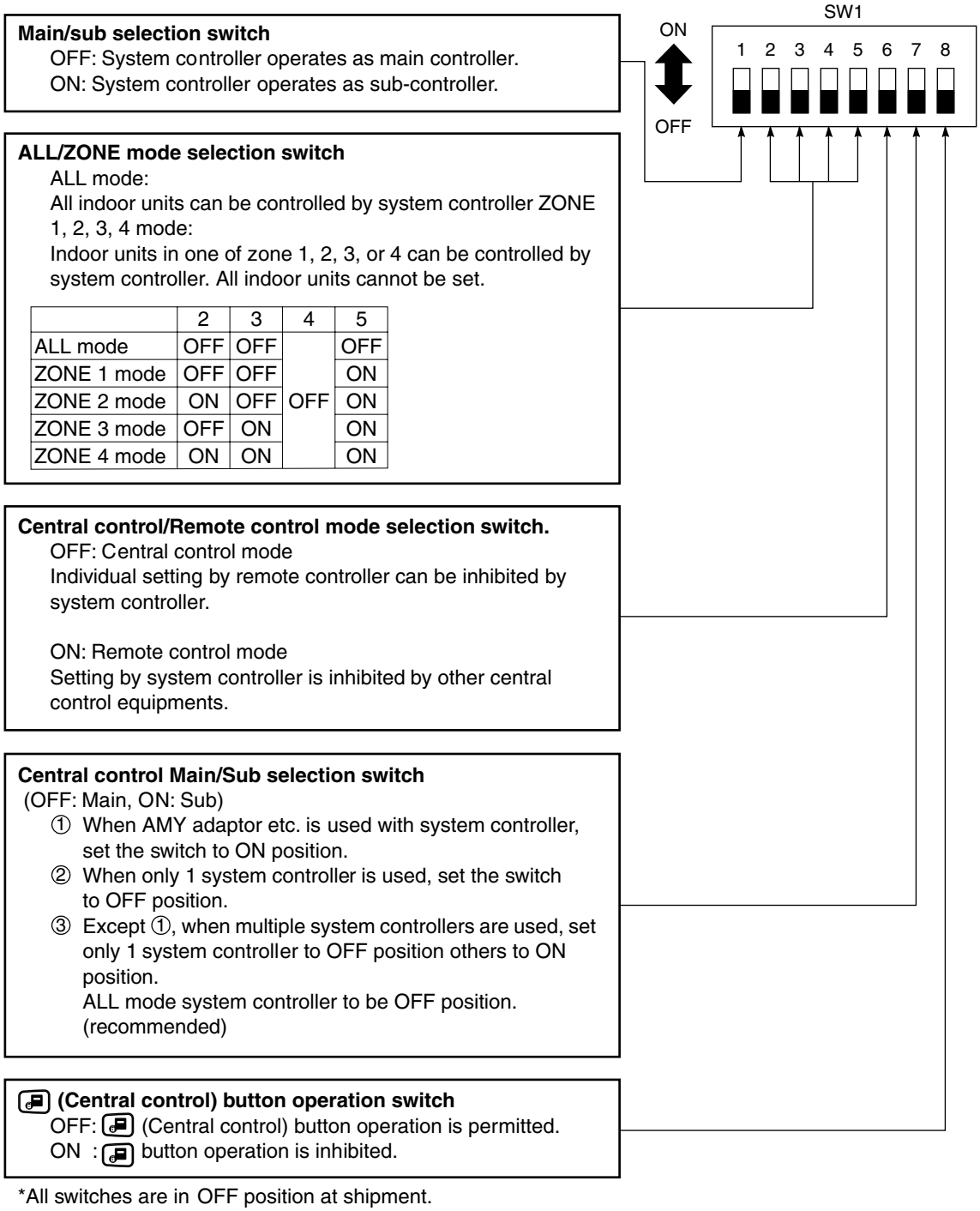

**How to reach the PCB**

Remove the flat-top screw on the bottom of the back case. When you open up the decorative cover, you will see 2 notches under the control unit. Inset a coin or other flat object into these notches and pry off the back case. The PCB on the back of the control unit is now visible.



# 4. System Controller

**SW1**




**Main/sub selection switch**
OFF: System controller operates as main controller.
ON: System controller operates as sub-controller.

**ALL/ZONE mode selection switch**
ALL mode:
All indoor units can be controlled by system controller ZONE 1, 2, 3, 4 mode:
Indoor units in one of zone 1, 2, 3, or 4 can be controlled by system controller. All indoor units cannot be set.

| | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| ALL mode | OFF | OFF | OFF | OFF |
| ZONE 1 mode | OFF | OFF | | ON |
| ZONE 2 mode | ON | OFF | | ON |
| ZONE 3 mode | OFF | ON | | ON |
| ZONE 4 mode | ON | ON | | ON |

**Central control/Remote control mode selection switch.**
OFF: Central control mode
Individual setting by remote controller can be inhibited by system controller.

ON: Remote control mode
Setting by system controller is inhibited by other central control equipments.

**Central control Main/Sub selection switch**
(OFF: Main, ON: Sub)
① When AMY adaptor etc. is used with system controller, set the switch to ON position.
② When only 1 system controller is used, set the switch to OFF position.
③ Except ①, when multiple system controllers are used, set only 1 system controller to OFF position others to ON position.
ALL mode system controller to be OFF position. (recommended)

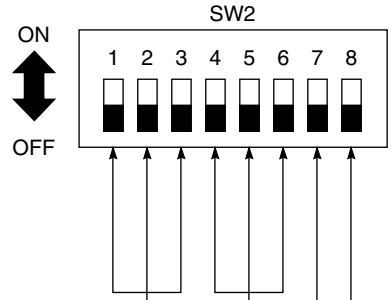
**(Central control) button operation switch**
OFF: (Central control) button operation is permitted.
ON : button operation is inhibited.

*All switches are in OFF position at shipment.

**Fig. 3-38**

# 4. System Controller

**SW2**




**Weekly timer input switches.**

System controller operation can be set when weekly timer activates (ON/OFF).

| | Switch No. / System controller operation | | 1 | 2 | 3 |
|---|---|---|---|---|---|
| | Timer OFF→ON | Timer ON→OFF | | | |
| ① | All ON | All OFF | OFF | OFF | OFF |
| ② | No change | All OFF | ON | OFF | OFF |
| ③ | Individual control of all indoor units to be permitted | All indoor units to be 1*1 | OFF | ON | OFF |
| ④ | Ditto | All OFF and all indoor units to be 1*1 | ON | ON | OFF |
| ⑤ | Ditto | All indoor units to be 2*2 | OFF | OFF | ON |
| ⑥ | Ditto | All OFF and all indoor units to be 2*2 | ON | OFF | ON |

In case of Remote control mode, use ① or ②.
In case of ZONE 1, 2, 3, 4 mode, ALL, all indoor units means one of ZONE 1, 2, 3, 4.

*1: 1 (Central control 1) means ON/OFF operation cannot be executed by remote controller.

*2: 2 (Central control 2) means ON/OFF, MODE change. Temp. setting cannot be executed by remote controller.

**Auxiliary switch**

Must be set to OFF position.

**Beep tone switch**

OFF: Beep tone when each button is pushed.
ON: No tone when each button is pushed.

**⊙ Indication switch**

Normally set to OFF position.
When set to ON position, ⊙ indication is not displayed on LCD of system controller.

*All switches are in OFF position at shipment.

**Fig. 3-39**

# 4. System Controller

## ■ Mode Setting

According to the function of each system controller, set SW1 as Fig. 3-40.

(1) Central control/Remote control mode Central control mode System controller is used as central control equipment.

Individual setting by remote controller can be inhibited by system controller Remote control mode System controller is used as remote controller.

Setting by system controller is inhibited by other central control equipments.

(2) ALL/ZONE mode

**ALL mode**

All indoor units can be controlled by system controller.

**ZONE mode**

Indoor units in one of ZONE 1, 2, 3 or 4 can be controlled by system controller

(3) Function of system controller is 10 types according to combination of central control/remote control mode and ALL/ZONE mode setting as

(4) the system controller unit label in a conspicuous position.

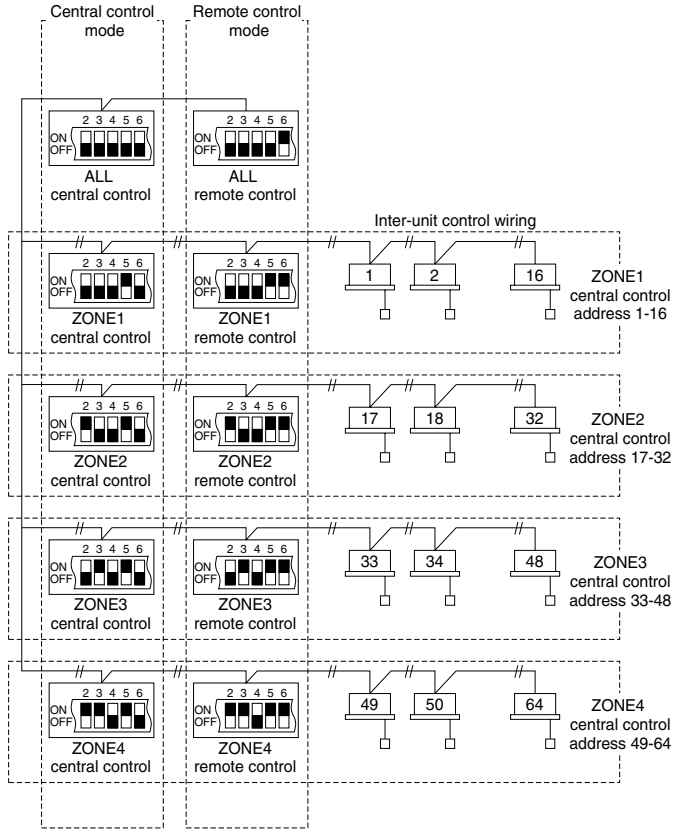



**Fig. 3-40**

**Table 1**

| | Central control | Remote control |
|---|---|---|
| ALL | 1. ALL/Central | 6. ALL/Remote |
| ZONE1 | 2. ZONE1/Central | 7. ZONE1/Remote |
| ZONE2 | 3. ZONE2/Central | 8. ZONE2/Remote |
| ZONE3 | 4. ZONE3/Central | 9. ZONE3/Remote |
| ZONE4 | 5. ZONE4/Central | 10. ZONE4/Remote |

# 4. System Controller

## ■ How to Perform Zone Registration

To operate the system controller properly, zone registration is required after finishing the test run (and after setting all indoor unit addresses) using one of the following methods.

(a) Zone registration using the remote controller (RCS-SH80AG)
Refer to page 3-59

(b) Zone registration using the system controller (SHA-KC64AG)
Refer to page 3-60

(c) Automatic zone registration using the system controller (SHA-KC64AG) Refer to page 3-60

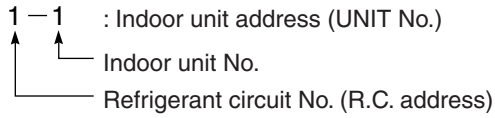
For methods (a) and (b), you should make a zone registration table manually before performing the registration. Use the form on page 3-58 for this.

For method (c), zone registration is executed automatically, proceeding from small indoor unit addresses and small central addresses to larger numbers in numerical order. For example:

| Central address | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| ZONE-group | 1-1 | 1-2 | 1-3 | 1-4 | 1-5 | 1-6 |
| Indoor unit address | 1-1 | 1-2 | 2-1 | 2-2 | 2-3 | 3-1 |

**NOTE**

1. An indoor unit address is assigned to each indoor unit during automatic address operation. Each indoor unit address combines an R.C. address and indoor unit number as follows:




   This address is displayed on remote controller for UNIT No. when the UNIT button is pressed.

2. The central address represents the zone and group number. These addressed are assigned in ascending numerical order.

# 4. System Controller

## ■ Zone Registration Table

| ZONE | GROUP | Central address | Indoor unit address (UNIT No.) | Unit location | ZONE | GROUP | Central address | Indoor unit address (UNIT No.) | Unit location |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1 | | | 3 | 1 | 33 | | |
| | 2 | 2 | | | | 2 | 34 | | |
| | 3 | 3 | | | | 3 | 35 | | |
| | 4 | 4 | | | | 4 | 36 | | |
| | 5 | 5 | | | | 5 | 37 | | |
| | 6 | 6 | | | | 6 | 38 | | |
| | 7 | 7 | | | | 7 | 39 | | |
| | 8 | 8 | | | | 8 | 40 | | |
| | 9 | 9 | | | | 9 | 41 | | |
| | 10 | 10 | | | | 10 | 42 | | |
| | 11 | 11 | | | | 11 | 43 | | |
| | 12 | 12 | | | | 12 | 44 | | |
| | 13 | 13 | | | | 13 | 45 | | |
| | 14 | 14 | | | | 14 | 46 | | |
| | 15 | 15 | | | | 15 | 47 | | |
| | 16 | 16 | | | | 16 | 48 | | |
| 2 | 1 | 17 | | | 4 | 1 | 49 | | |
| | 2 | 18 | | | | 2 | 50 | | |
| | 3 | 19 | | | | 3 | 51 | | |
| | 4 | 20 | | | | 4 | 52 | | |
| | 5 | 21 | | | | 5 | 53 | | |
| | 6 | 22 | | | | 6 | 54 | | |
| | 7 | 23 | | | | 7 | 55 | | |
| | 8 | 24 | | | | 8 | 56 | | |
| | 9 | 25 | | | | 9 | 57 | | |
| | 10 | 26 | | | | 10 | 58 | | |
| | 11 | 27 | | | | 11 | 59 | | |
| | 12 | 28 | | | | 12 | 60 | | |
| | 13 | 29 | | | | 13 | 61 | | |
| | 14 | 30 | | | | 14 | 62 | | |
| | 15 | 31 | | | | 15 | 63 | | |
| | 16 | 32 | | | | 16 | 64 | | |

**NOTE** **1. Assign indoor unit addresses to the desired positions (central addresses) manually.**
**2. For group control, only the main indoor unit should be assigned. Sub indoor units cannot be assigned.**

**(a) Zone registration using the remote controller**
(RCS-SH80AG)
(Determination of central address)
In this case, after confirming which indoor unit is connected to the remote controller and that the air conditioner in the OFF state, you set the central addresses one at a time.
If the system has no remote controller, connect a remote controller to the system temporarily. Then follow this procedure.

**NOTE**

The indoor unit address must already have been set before performing zone registration. If necessary, refer to the Installation Manual supplied with the outdoor unit.

(1) Press the [wrench] and [home] buttons at the same time of the remote controller for more than 4 seconds.

(2) Do not press [UNIT] button.

(3) Once in this mode, the UNIT No., CODE No., No. of SET DATA and SETTING indications will flash on the display as shown Fig. 3-41.

**NOTE**

In case of group control "ALL" instead of "UNIT No." will flash on the display. Select the main indoor unit address by pressing the [UNIT] button once.

(4) Set CODE No. to 03 using the [▲] and [▼] ( [thermometer] ) buttons.

**NOTE**

CODE No. 03 must be selected to perform zone registration using the remote controller.

(5) Set the Central address which you want to assign to the indoor unit address using the [▲] and [▼] ( [clock] ) buttons according to the zone registration table.

(6) Press the [SET] button. The CODE No. and Central address changes from flashing to ON state. If you make mistake, then press the [CL] button and reset the central address.

(7) Press the [wrench] button to finish zone registration.

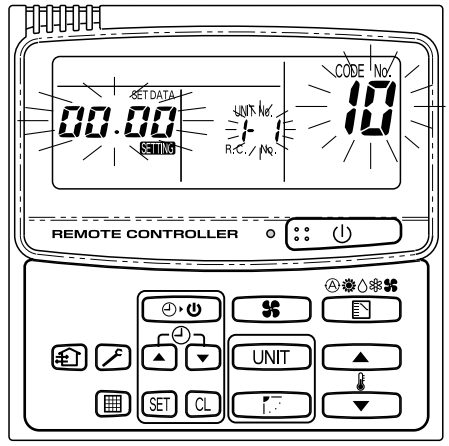
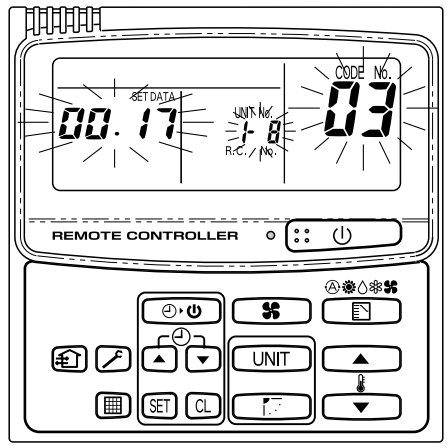



**Fig. 3-41**




For example, in this case
Indoor unit address: 1-8
Central address : 17 (ZONE 2, GROUP 1)

**Fig. 3-42**

**(b) Zone registration using the system controller (SHA-KC64AG)**

In this case, you set all Central addresses by system controller at once manually.

(1) Press the [🔧] and [ZONE] buttons at the same time for more than 4 seconds.
SETTING and CODE No. C1 will flash.

(2) After confirming that CODE No. C1 is displayed, press the [SET] button. Once in this mode, a change takes place as shown in Fig. 3-43.

(3) Select the zone and group No. which you want to set with [ZONE] and [◀] [▶] (GROUP) buttons. If already set, press the [CL] button.

(4) Set the unit No. (Indoor unit address) with [🎵] and [⊡] buttons, according to the zone registration table.
R.C. No. ..... [🎵] button
Indoor unit No..... [⊡] button

(5) Press the [SET] button.
GROUP No. turns ON and UNIT No. (Indoor unit address) changes from flashing to ON state. UNIT No. is registered to selected ZONE No. and GROUP No.
If you make a mistake, then press the [CL] button and reselect the ZONE, GROUP and UNIT No.

(6) Register the other UNIT Nos. in the same way by following steps (3) to (5).

(7) Finally, complete the registration by pressing the [🔧] button.
SETTING flashes for a few minutes, then goes OFF.

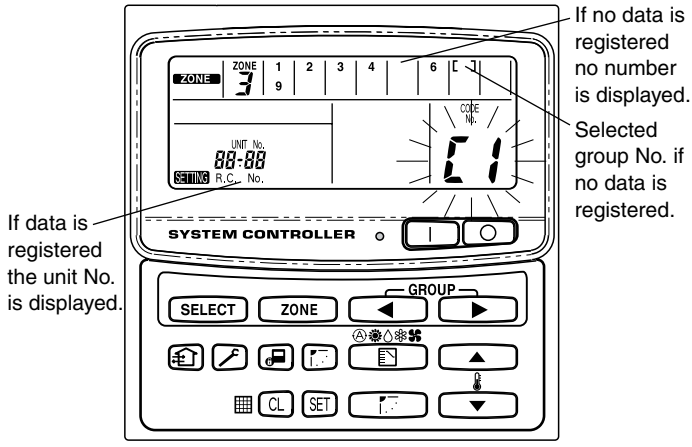
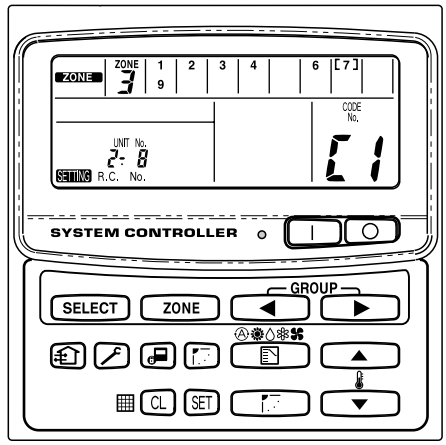



**Fig. 3-43**




For example, in the case at left
Zone 3, group No. 7
Unit No. (indoor unit address) 2-8
Unit No. 2-8 is registered to zone 3-group 7.

**Fig. 3-44**

**(c) Automatic zone registration using the system controller (SHA-KC64AG)**

(1) Press the [🔧] and [ZONE] buttons at the same time for more than 4 seconds.
SETTING and CODE No. C1 will flash.

(2) Select CODE. No. C2 by pressing [▲] and [▼] ( 🌡 ) button and press the [SET] button.
C2 changes from flashing to ON state and automatic zone registration will start.

(3) All registered GROUP Nos. will disappear.

(4) Central addresses will be assigned from small indoor unit addresses to large addresses in numerical order automatically.
After automatic zone registration is completed, SETTING changes from flashing to OFF.

(5) If an error occurs "CHECK" starts flashing and zone registration finishes at this time. Press the [CL] button.

(6) Finally, complete automatic zone registration mode by pressing the [🔧] button.
SETTING flashes for a few minutes, then goes OFF.

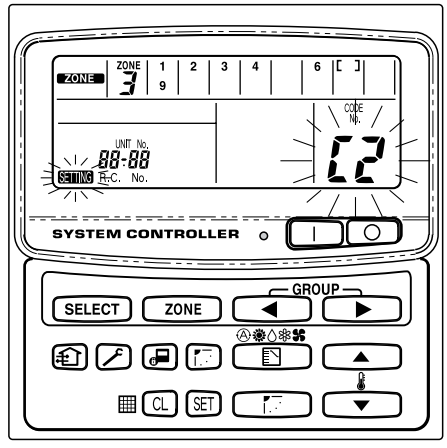



**Fig. 3-45**

# 4. System Controller

## ■ How to Check Overlapping of Central Address Nos.

(1) Press the [🔧] and [ZONE] buttons at the same time for more than 4 seconds.
SETTING and CODE No. C1 will flash.

(2) Select CODE. No. C3 by pressing [▲] , [▼] ( 🌡 ) button and press [SET] the button.
C3 changes from flashing to ON state and SETTING will flash. Then auto. overlap checking will start.

(3) If C3 changes from ON to flashing and SETTING stops flashing and disappears, there is no overlapping.
Then complete the auto overlap checking mode by pressing the [🔧] button.

(4) If some of GROUP No., ZONE No. and UNIT No. flash, you should try the zone registration again.
A) Select CODE No. C1 by pressing [▲] , [▼] ( 🌡 ) button and press the [SET] button.
B) Select the flashing GROUP No. with ZONE and GROUP button.
Then press the [CL] button and reselect the ZONE, GROUP and UNIT No.
C) Then complete the auto. overlap checking mode by pressing the [🔧] button.

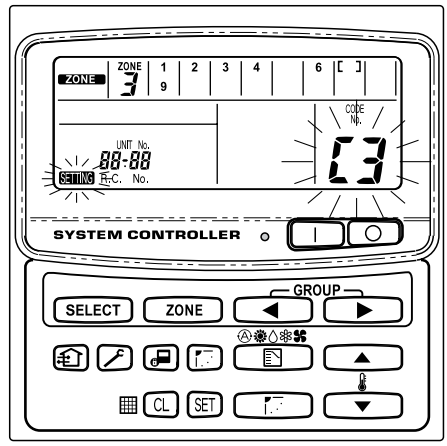



**Fig. 3-46**

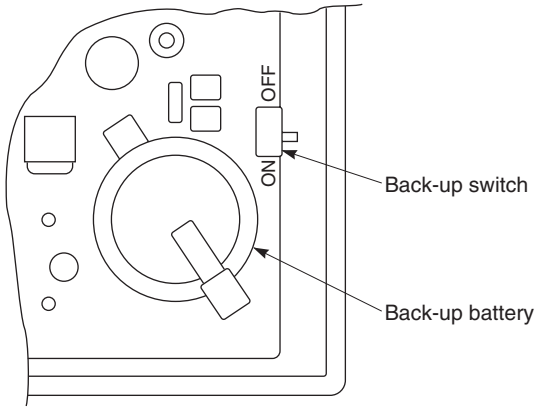
## ■ Memory Back-Up Switch

Check the back-up switch is ON at the back of the system controller PCB.

## ■ Test Run

(1) Supply power to all indoor units. Next, power on the system controller.
SETTING will flash, checking the indoor unit addresses automatically.

(2) If the group No. displayed on system controller is not the same as indoor unit No.* which is connected, see Fig. 3-40 and do the setting again.
* In case of group control, main unit No. only.



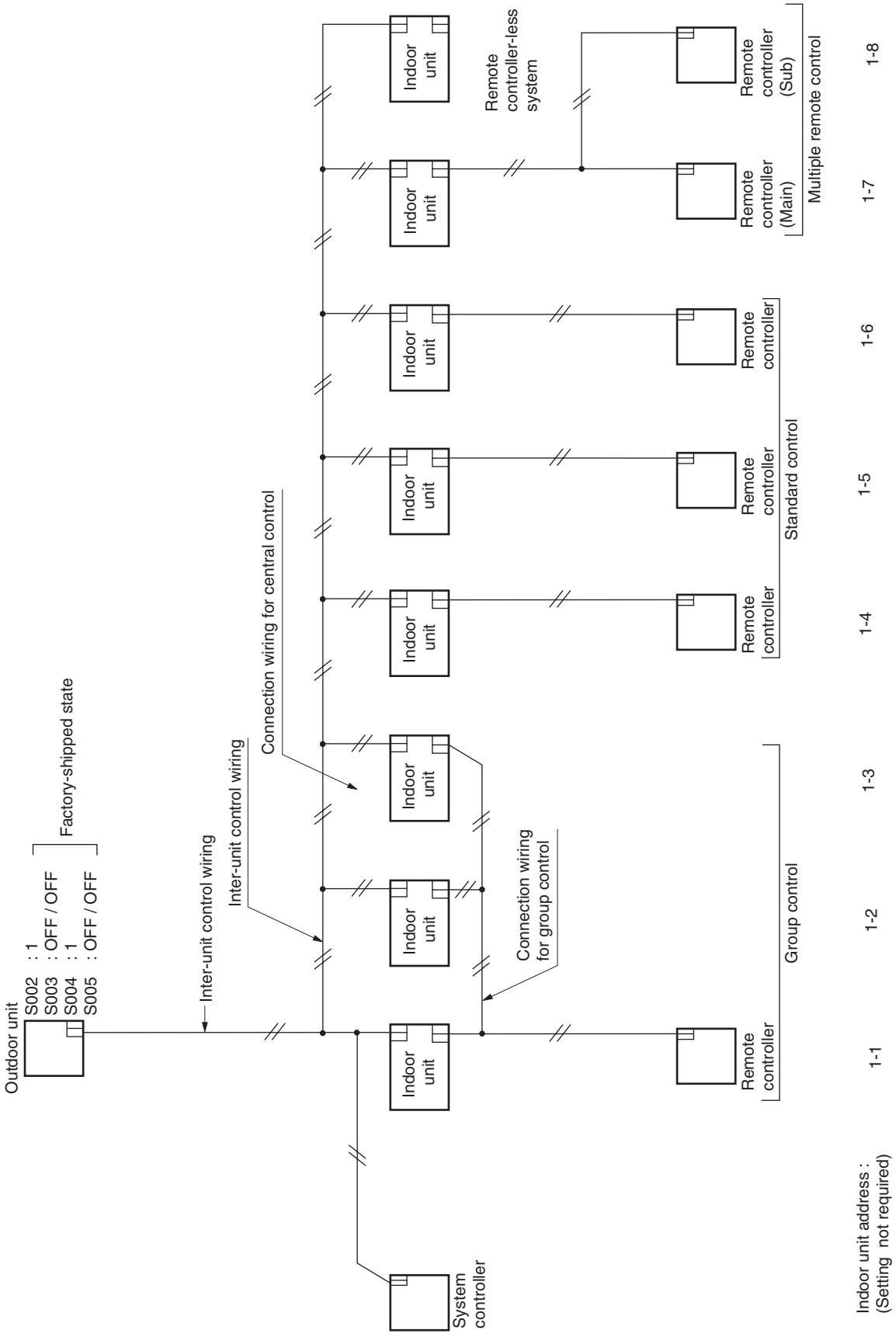

3

# 4. System Controller

## ■ System Examples

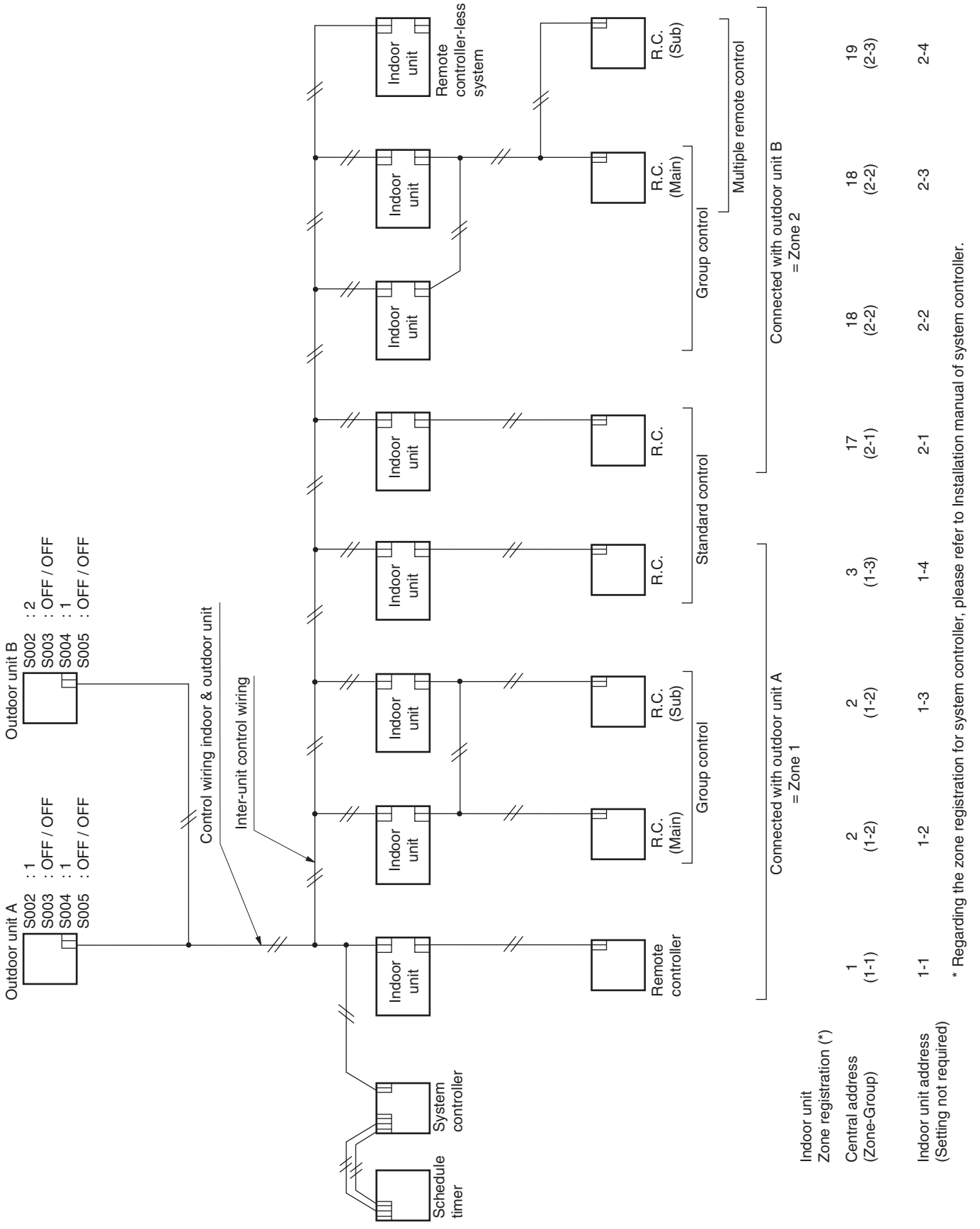
The following diagrams show system examples and the correct setting of the switches on the PCB.

(1) For a system without link



# 4. System Controller

(2) For a system with link



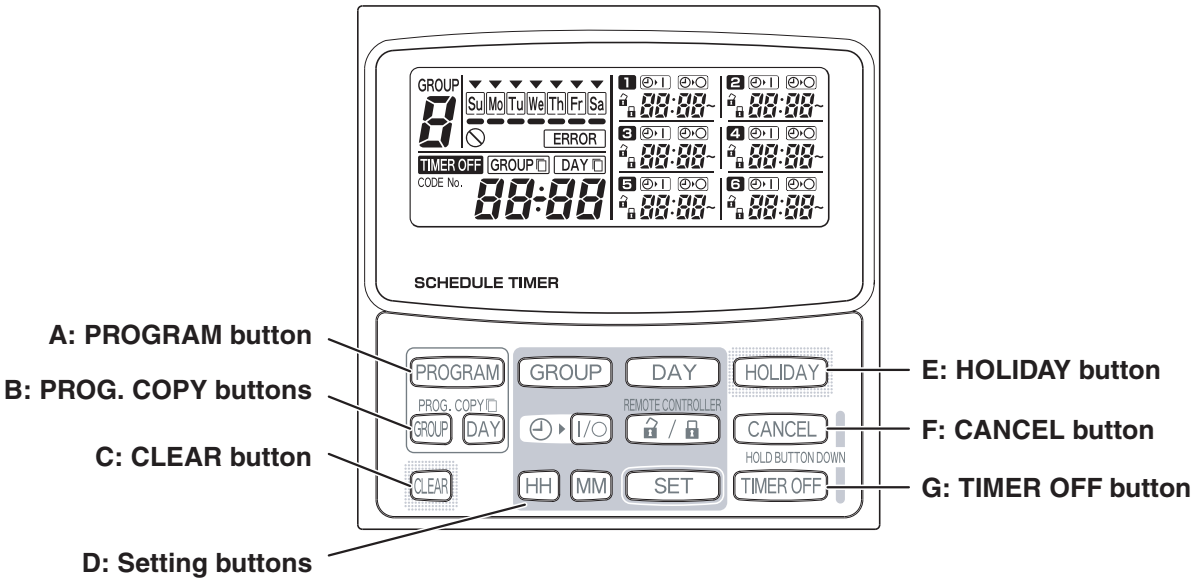

* Regarding the zone registration for system controller, please refer to Installation manual of system controller.

3

# 5. Schedule Timer

**Schedule Timer / SHA-TM64AG**

## ■ Operation Buttons

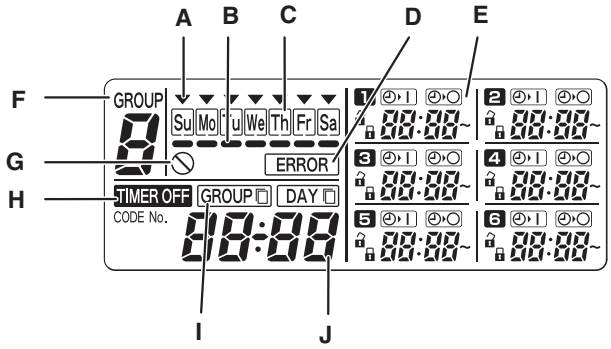



| | |
|---|---|
| **A: PROGRAM button** | Use to start setting programs and to enter program settings. |
| **B: PROG. COPY buttons** | Use to copy programs to groups or specific days in a schedule. |
| **C: CLEAR button** | Press to clear the settings of the currently displayed program.<br>• The current program is not cleared unless the PROGRAM button is pressed after pressing the CLEAR button. |
| **D: Setting buttons** | Use to make program settings and to set the present time. |
| GROUP | Press to set groups for programmed operation. |
| DAY | Press to set today's day and days of programmed operation. |
| HH MM | Press to set the present time and times used in programmed operation. |
| I/O | Use to start/stop indoor units via the timer. |
| REMOTE CONTROLLER | Use to enable/disable remote controller operation via the timer. |
| SET | Use to set programmed operation trigger time.<br>• Program settings are not entered unless the PROGRAM button is pressed at the end of setting operations. |
| **E: HOLIDAY button** | Press to set and cancel holidays during a scheduled week of operation. |
| **F: CANCEL button** | Press to cancel the current program setting operation, copying operation or holiday setting operation. When the CANCEL button is held down for 2 seconds, the current setting operation or copying operation is canceled and the normal display returns. |
| **G: TIMER OFF button** | Press to turn the timer OFF when timer operation will not be used for a long period of time. When this button is held down for 2 seconds, TIMER OFF appears on the display. Programs cannot be run until the button is again held down for 2 seconds. |

- Some of the above features are disabled when the unit is installed. If the button of a disabled feature is pressed, ⃠ appears on the display. For more information, contact your dealer.

# 5. Schedule Timer

## ■ Display




| | |
|---|---|
| **A: Today's day of the week ( ▼ )** | Indicates today's day of the week. |
| **B: Program schedule indication ( ▬ )** | Appears under days that are scheduled for program operation. |
| **C: Holiday schedule indication ( ▯ )** | Appears around scheduled holidays. |
| **D: ERROR indication** | Displayed when a mistake is made during timer setting. |
| **E: Timer program** | Displays set timer programs. Also, indicates the copy source/destination during group program copying. |
| **F: Group No.** | Up to 8 groups can be selected and displayed. |
| **G: ⃠ (Disabled Feature) indication** | Displayed if the selected feature was disabled during installation. |
| **H: TIMER OFF indication** | Displayed when the timer has been turned OFF. |
| **I: Copy mode indication** | Displayed when copying a program into a group or day of the schedule. |
| **J: Present time** | Displays the present time on a 24-hour clock. Also, displays settings in the various setting modes. |

## ■ Using the Schedule Timer

To use the schedule timer, follow the steps below.

**STEP1** **Turn ON power to the air conditioner.**

- Turn ON power to the air conditioner connected to the schedule timer. The schedule timer performs initial communications with the indoor units, during which SC An blinks on the display.

**NOTE**

Do not turn off the power mains in heating and cooling seasons. (This keeps the crankcase heater electricity turned on, which protects the compressor at startup.) If the air conditioner has been OFF for a long period of time, turn on power 5 hours before starting operation.

**STEP 2** **Make the initial settings of the schedule timer.**

- Set the present time and today's day of the week. (Refer to page 3-67.)

**STEP 3** **Set up programs of the schedule timer.**

- Make settings for programmed operation. (Refer to page 3-79.)

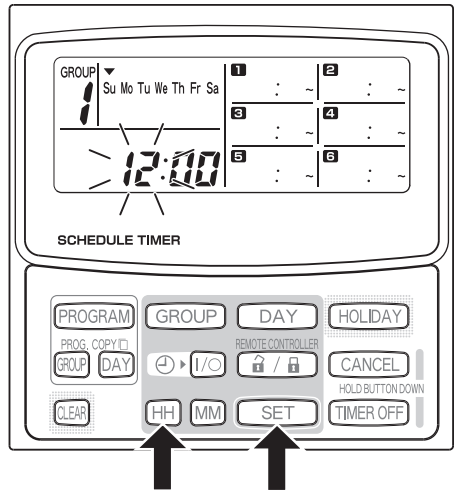
# 5. Schedule Timer

## ■ Setting the Present Time

Set the present time. (Example: When the present time is 12:45)

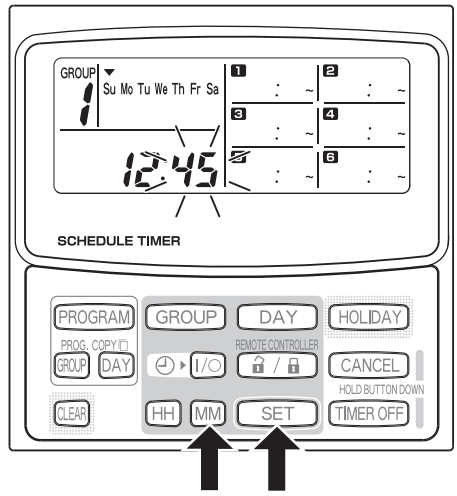
**STEP 1** **Hold down the SET button and press the HH button to set the hour.**

- The hour increases 1 hour at a time with each single press of the HH button while the SET button is held down.
- The hour scrolls rapidly when both the SET button and HH button are held down. (Example: To set 12:00, release the HH button when "12" is displayed.)
- When the SET button is released, the hour is set and the indication changes from blinking to lighting.




**STEP 2** **Hold down the SET button and press the MM button to set the minutes.**

- The minutes increase 1 minute at a time with each single press of the MM button while the SET button is held down.
- The minutes scroll rapidly when both the SET button and MM button are held down. (Example: To set 00:45, release the MM button when "45" is displayed.)
- When the SET button is released, the minutes are set and the indication changes from blinking to lighting.




**NOTE**

- **Pressing just the HH or MM button does not change the time.**

3

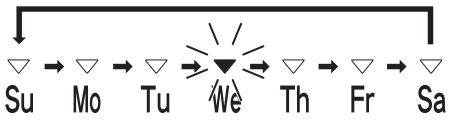
# 5. Schedule Timer

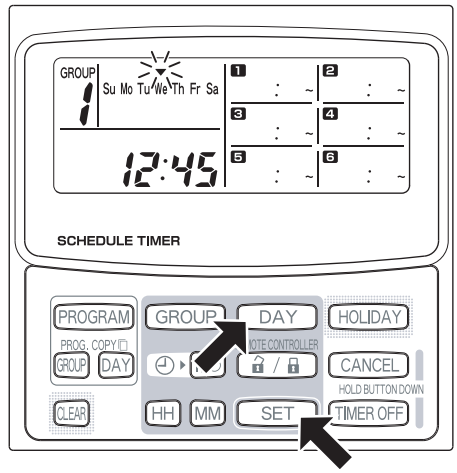
## ■ Setting Today's Day of the Week

Set today's day of the week. (Example: When today is Wednesday)

**STEP 1** **Hold down the SET button and press the DAY button to set today's day of the week.**

- ▼ blinks and moves 1 day at a time across the days of the week with each single press of the DAY button while the SET button is held down.
- When the SET button is released, the day of the week is set and the ▼ changes from blinking to lighted.




**NOTE**

- **Pressing just the DAY button does not change the day of the week.**

3

# 5. Schedule Timer

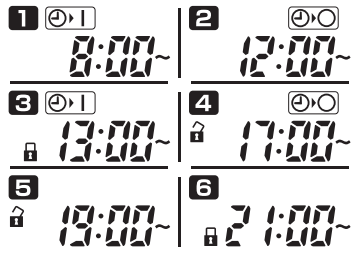
## ■ Setting Up Programmed Operations

**Correctly set the present time and today's day of the week.**
**Unless both are correctly set, the programs will not run as expected.**

- Up to 6 programmed operations can be set per day for each group and day of the week.
- A combination of the below operations can be set for each timer program.
  – Air conditioner starting/stopping
  – Remote controller operation enable/disable *1
- To change the settings of an existing program, use the same procedure used to set up a new program as below.

*1 The remote controller operation enable/disable setting is disabled depending on installation conditions. If so, ⃠ appears on the display when the [ / ] button is pressed.
For more information, contact your dealer.

**Example settings**




**STEP 1** **Press the PROGRAM button to select a group.**

- When the PROGRAM button is pressed, the group No. and today's day of the week start blinking and the present time indication changes to a blinking “PG-1”.
- Press the GROUP button to select a group for programmed operation and then press the SET button.

**NOTE**

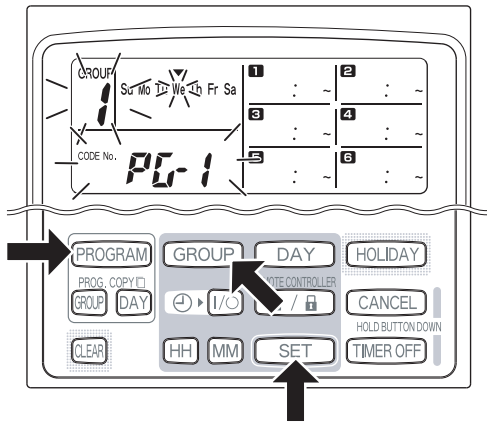
- Group selection is disabled depending on installation conditions. If so, proceed to the next step.
- The number of selectable groups is set during installation.

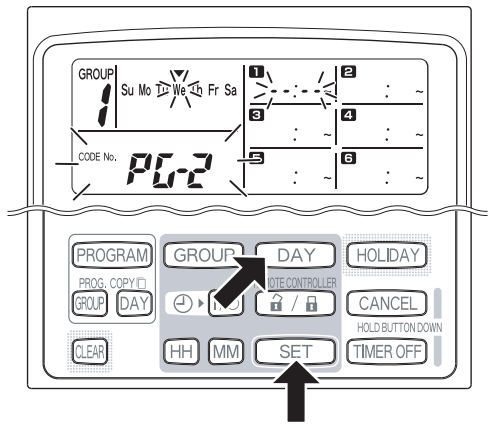
**STEP 2** **Press the DAY button and select a day of the week for programmed operation.**

- When the SET button is pressed, the program schedule marker (▬) changes from blinking to lighting and, at the same time, the time set in program 1 starts blinking. Also, the present time indication changes to a blinking “PG-2”.

**NOTE**

- The currently selected day of the week blinks slowly at this time.



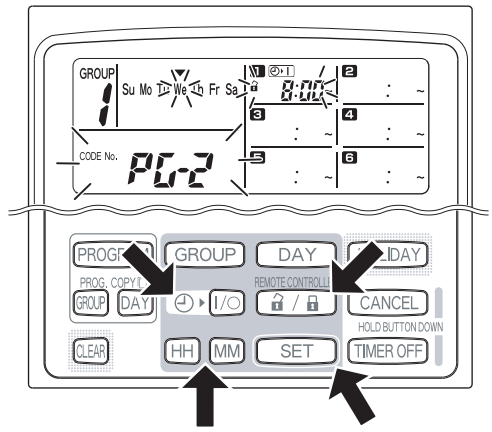




3

# 5. Schedule Timer

**STEP 3** **Set up the program and press the SET button.**

- Select timer operation with the ⏲▸I/○ (timer ON/ OFF) button and 🔓 / 🔒 (remote controller operation enable/disable) button. Then, set the trigger time with the HH and MM buttons, and press the SET button.
- When the SET button is pressed, the time set in program **1** changes from blinking to lighting and, at the same time, the time set in program **2** starts blinking.

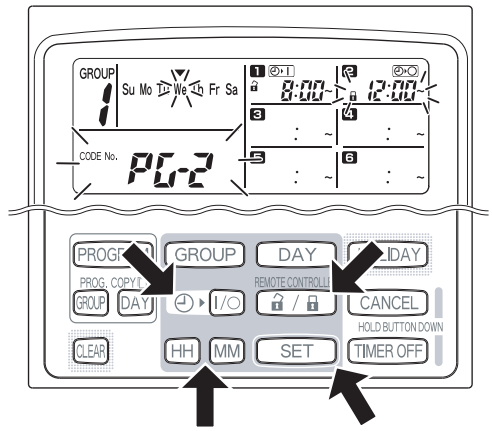



**NOTE**

- Every time the ⏲▸I/○ button is pressed, the timer indication changes in the order of ⏲▸I (ON) ⏲▸○ (OFF) no indication.
- Every time the 🔓 / 🔒 button is pressed, the remote controller indication changes in the order of 🔓 (enabled) 🔒 (disabled) no indication.
- The remote control operation enable/disable setting is disabled depending on installation conditions. In this case, only timer ON/ OFF can be set.

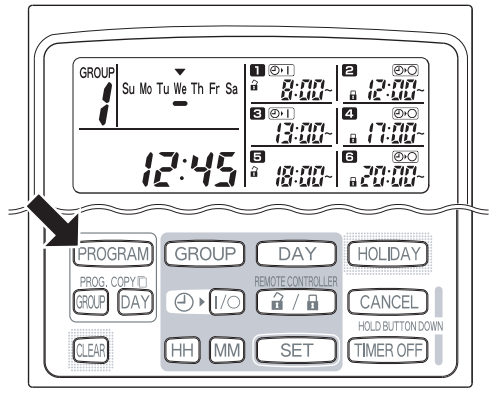
**STEP 4** **Set up programs 2 ~ 6 in the same way.**

- When the SET button is pressed, settings are automatically arranged in the order of earliest time first.
- If the SET button is pressed without any new settings being made in the program, program **1** starts blinking again and settings can be changed.
- Similarly, if the SET button is pressed after setting up program **6** , program **1** starts blinking again.




**STEP 5** **Press the PROGRAM button.**

- Program settings are entered and the normal display returns.




**STEP 6** **Set up programmed operation for other groups and days of the week in the same way.**
Programs that have already been set up can be copied into other groups and days of the week. (Refer to page 3-72.)

**NOTE**

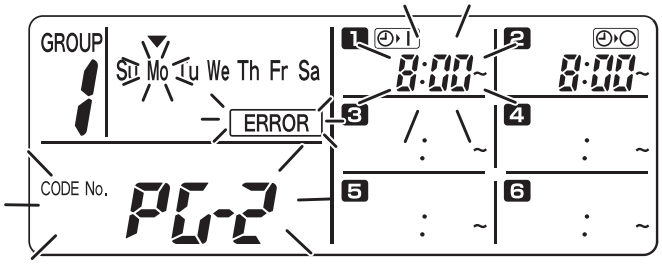
- **A "0:00" time setting is interpreted to mean 12:00 midnight.**
- **To cancel program settings during program setup (while "PG-1" or "PG-2" is blinking on the display), hold down the CANCEL button for more than 2 seconds. The normal display returns.**
- If settings are canceled without pressing the PROGRAM button, settings are not entered.

# 5. Schedule Timer

## ■ Setting Errors

If time is set as shown below while setting up a program, “ERROR” is displayed (the ERROR indication blinks). Therefore, correct the time setting.

### If Program Times are the Same




STEP 1 Every time the SET button is pressed, the setting mode switches between programmed operations of the same time setting ( 1 and 2 in the above example), therefore select the time setting to correct.

STEP 2 Change the time setting with the HH and MM buttons so that the times are no longer the same.

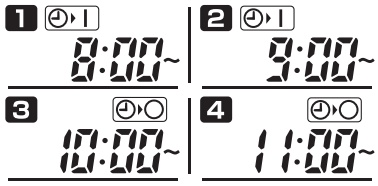
STEP 3 Press the SET button and check “ERROR” is not displayed.

STEP 4 Press the PROGRAM button to end the setting mode.

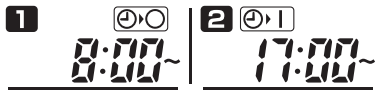
### Example of Time Settings That Do Not Cause Errors

The below time settings do not generate an error.

**1) When ON and OFF times are staggered**




**2) When OFF time is earlier than ON time**




3

# 5. Schedule Timer

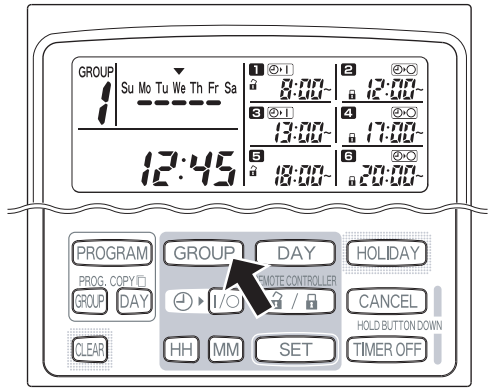
## ■ How to Check Program Times

You can check the programmed times for each group and day of the week.

**STEP 1** **Press the GROUP button and select a group whose time you want to check.**

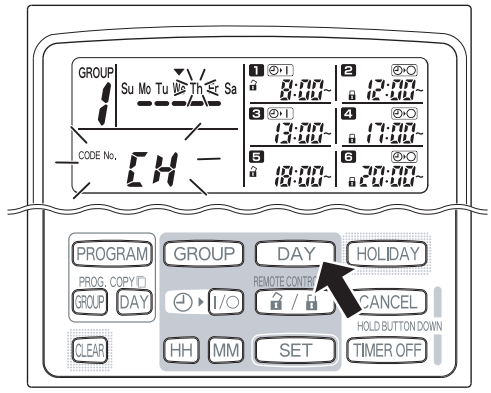
**NOTE**

- Group selection is disabled depending on installation conditions. If so, proceed to the next step.




**STEP 2** **Press the DAY button.**

- When the DAY button is pressed the first time, tomorrow's day of the week starts blinking and the program settings for tomorrow are displayed.
- Every time the DAY button is pressed, the program settings change in order of the days of the week.
- Pressing the GROUP button displays the program settings of another group on that same day.

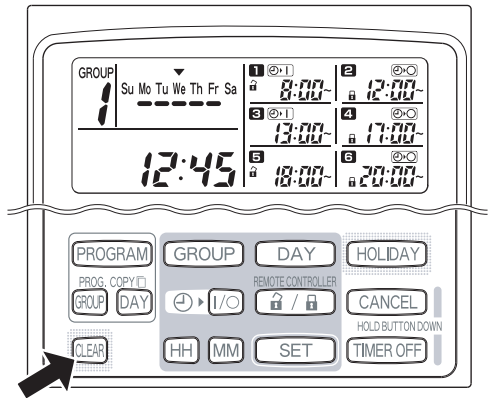



**STEP 3** **STEP 3 End checking.**

- Press the CLEAR button. The normal display returns.

**NOTE**

- Holding down the CANCEL button for more than 2 seconds also returns the normal display.



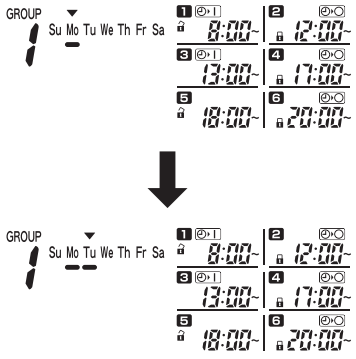

3

# 5. Schedule Timer

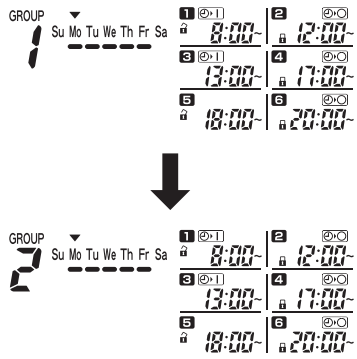
## ■ How to Copy Program Times

You can copy the already set program of one day into another day (Day Program Copying), as well as copy the week programmed for one group into another group (Group Program Copying).

**Example of Day Program Copying (Copying Monday's program into Tuesday)**



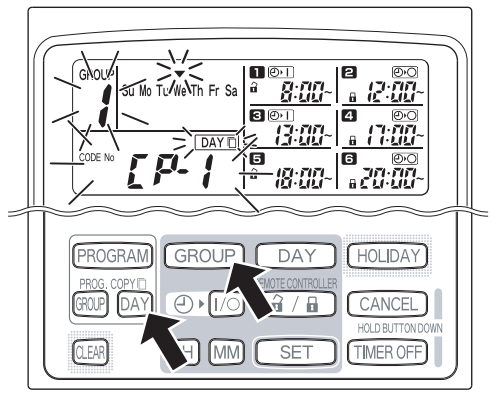

**Example of Group Program Copying (Copying group No. 1's program into group No. 2)**




### How to Copy Day Programs

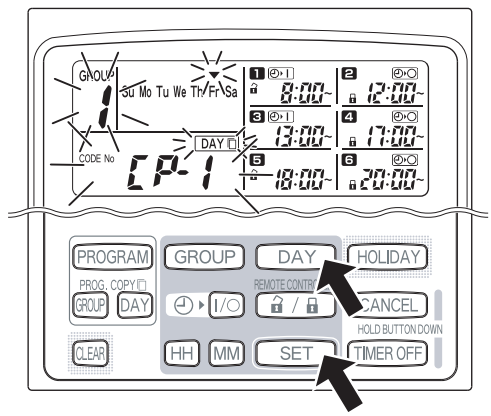
**STEP 1** **Press the PROG. COPY DAY button.**

- The group No. and the ▼ over today's day start blinking and "CP-1" starts blinking in the present time display area. In this state, select a group in which to copy day programs, using the GROUP button.



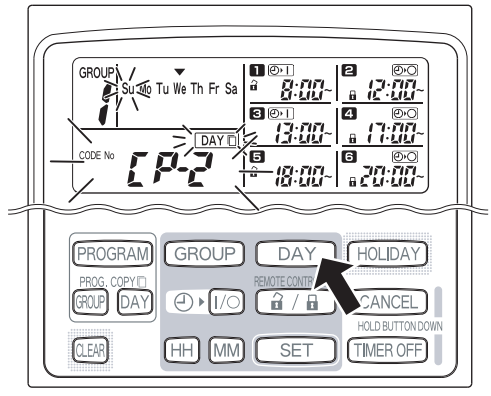

**STEP 2** **Select a source day program to copy.**

- Every time the DAY button is pressed, the ▼ moves across the days of the week display, therefore select a day of the week that will serve as the copy source.
- Once having selected the copy source day, press the SET button to set it. The display changes to key you to select a copy destination day.




**STEP 3** **Select a copy destination day.**

- When the schedule timer is ready for you to select a copy destination day, "CP-2" starts blinking in the present time display area, while the selected copy source day blinks in the days of the week.
  Therefore, select a day of the week as the copy destination, using the DAY button.

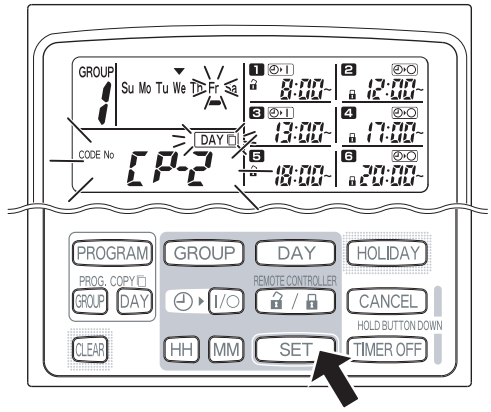



3

# 5. Schedule Timer

**STEP 4** **Press the SET button to copy.**

- Press the SET button and the program schedule marker (▬) will be displayed.

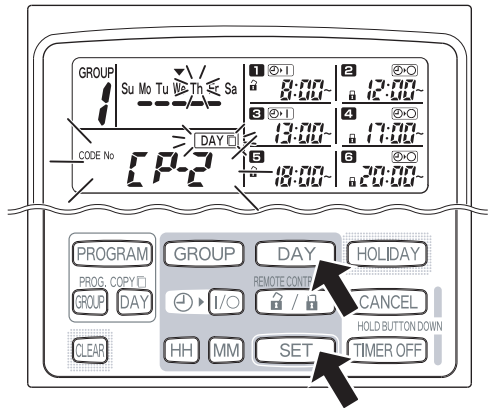



**STEP 5** **Select other copy destination days if desired.**

- You can copy the selected source day program into other days by repeatedly pressing the DAY button to select a day of the week followed by the SET button to set it.

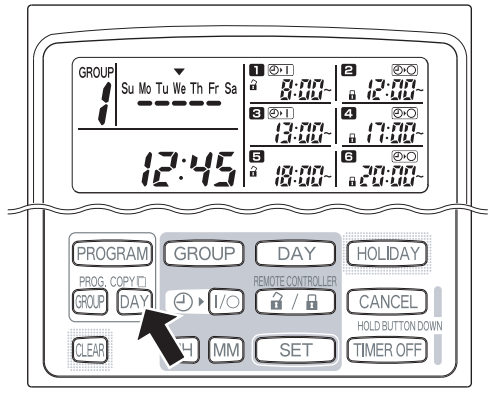
**NOTE**

- Pressing the CLEAR button extinguishes the program schedule marker (▬) and cancels the copy operation.




**STEP 6** **Press the PROG. COPY DAY button to enter the copied program in the selected days.**

- The normal display returns.




**NOTE**

- **If a program already exists in the copy destination day, the newly copied program overwrites the existing program.**
- **If you accidentally copy over a program in the day program copy mode, holding down the CANCEL button for more than 2 seconds returns the program to the point prior to pressing the PROG. COPY DAY button in STEP 1. (All changes and copy operations made up until that point are cleared.)**

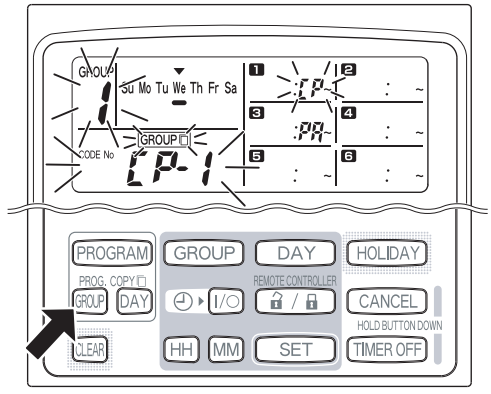
3

# 5. Schedule Timer

## ■ How to Copy Group Programs

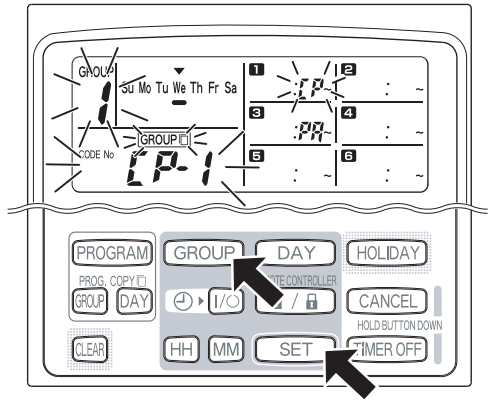
**STEP 1** **Press the PROG. COPY GROUP button.**

- "CP-1" starts blinking in the present time display area and "CP" (copy) starts blinking in the program 1 area to indicate the copy source.



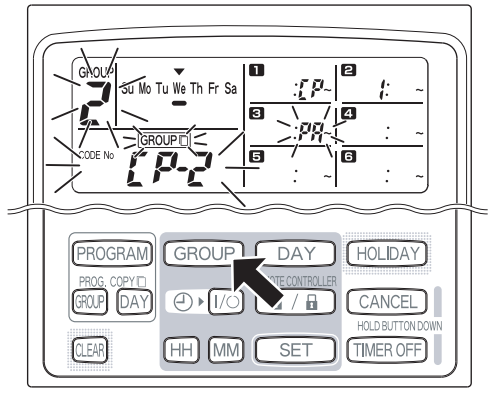

**STEP 2** **Select a source group program to copy.**

- Select a copy source group using the GROUP button.
- Once having selected the copy source group, press the SET button to set it.




**STEP 3** **Select a copy destination group.**

- After pressing the SET button, "CP-2" starts blinking in the present time display area, the copy source group No. set appears in the program 2 area, and "PA" (paste) starts blinking in the program 3 area to indicate the copy destination.
- Select a copy destination group using the GROUP button.

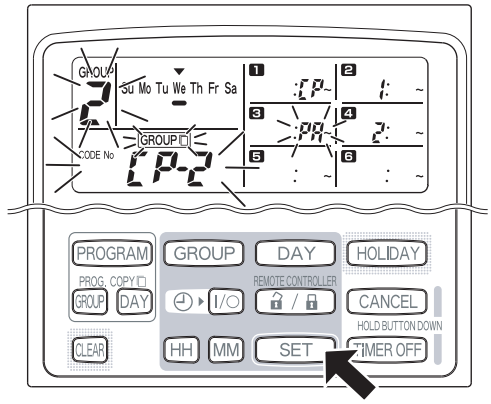



**STEP 4** **Enter the selected copy destination group.**

- When the SET button is pressed, the number of the copy destination group appears in the program No. area.

**NOTE**

- If a group from numbers 1 to 4 was selected as the copy destination group, that number appears in the program 4 area. If a group from numbers 5 to 8 was selected, that number appears in the program 6 area.




3

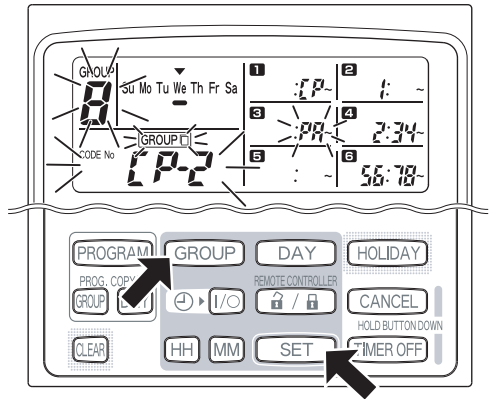
# 5. Schedule Timer

**STEP 5** **Select other copy destination groups if desired.**

- You can copy the selected source group programs into other groups by repeatedly pressing the GROUP button to select a group followed by the SET button to set it.

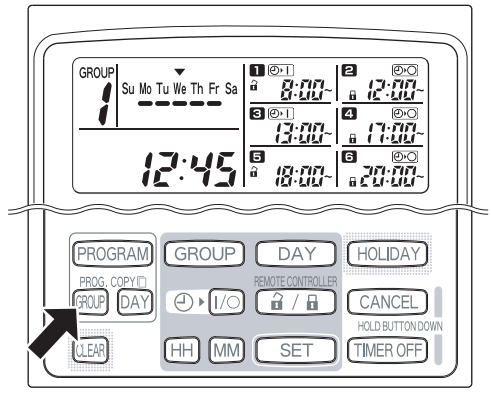
**NOTE**

- If a group from numbers 1 to 4 was selected as the copy destination group, that number appears in the program **4** area. If a group from numbers 5 to 8 was selected, that number appears in the program **6** area.




**STEP 6** **Press the PROG. COPY GROUP button to enter the copied programs in the selected groups.**

- The normal display returns.




**NOTE**

- **If a program already exists in the copy destination group, the newly copied program overwrites the existing program.**
- **If you accidentally copy over a program in the group program copy mode, holding down the CANCEL button for more than 2 seconds returns the program to the point prior to pressing the PROG. COPY GROUP button in STEP 1. (All changes and copy operations made up until that point are cleared.)**

# 5. Schedule Timer

## ■ How to Set Holidays in a Scheduled Week of Operation

Operations programmed for a specific day during the week can be temporarily disabled by setting that day as a holiday.

- When the set holiday passes, the holiday setting is canceled and operation is resumed as programmed the following week.
- Holidays can be selected for the week starting from today's day. If today is selected as a holiday, the holiday setting is canceled from the next programmed operation. (Depending on the program, if the program is currently running, the program may not stop.)

### Example Setting

Today is Thursday and Friday is set as a holiday.

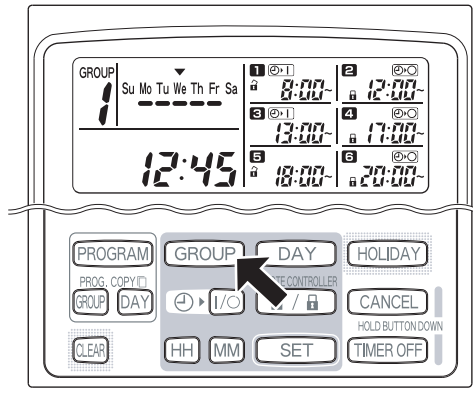
When Friday comes, the program set for that day does not run.

When Saturday comes, Friday's holiday setting is canceled.

**STEP 1** **STEP 1 Press the GROUP button to select a group to go on holiday.**

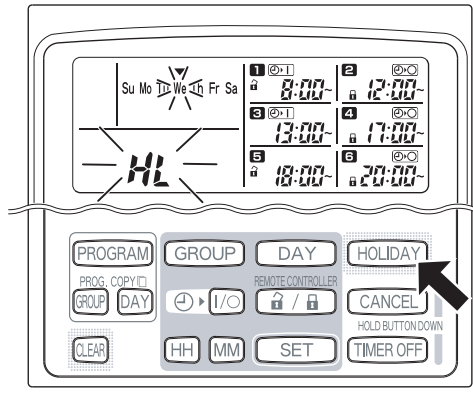
**NOTE**

- Depending on installation conditions, group selection is disabled or set so that all groups are automatically selected for the holiday feature. If so, proceed to the next step.



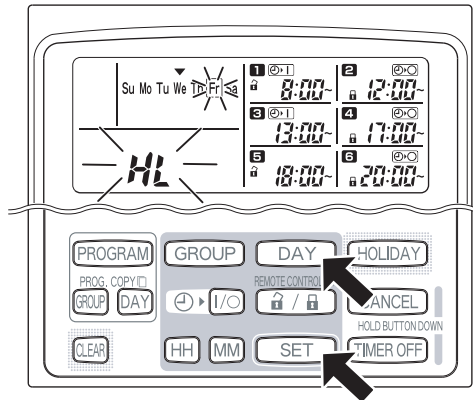

**STEP 2** **Press the HOLIDAY button.**

- "HL" starts blinking in the present time display area and today's day of the week starts blinking.




**STEP3** **Select a day as the holiday using the DAY button, and press the SET button.**

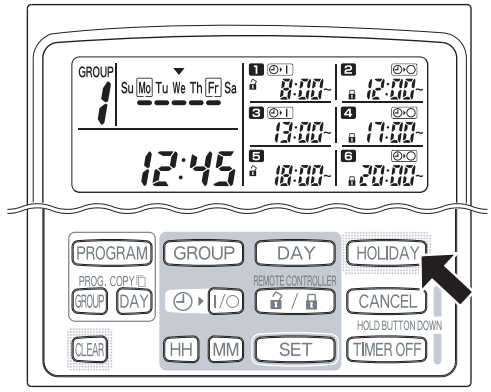
- A " ⎵ " appears over the selected holiday.
- To select other holidays, select a day using the DAY button and set it with the SET button.
- If you made a mistake or want to cancel a holiday, press the CLEAR button.




3

# 5. Schedule Timer

**STEP 4** **Press the HOLIDAY button to enter the holiday.**
- The normal display returns.

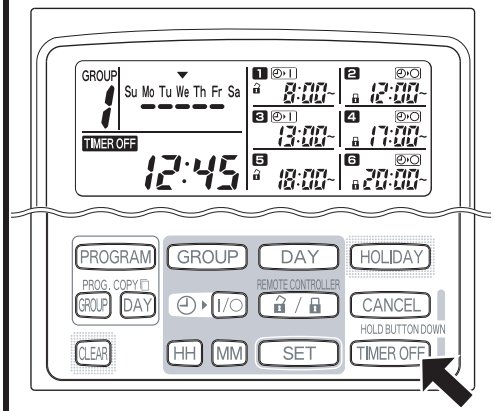



To halt programmed operation for one week or more, you can disable all timer programs.
- Once the timer has been disabled, programmed operations are not run until the below procedure is performed.

**NOTE**

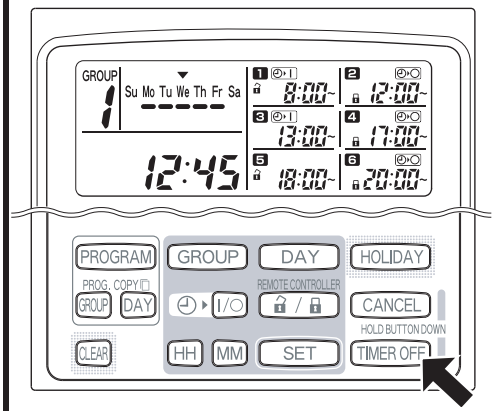
- During installation, the remote controller may be set to disable the timer for individual groups. In this state, the timer is disabled only for the selected group, therefore press the GROUP button to confirm which group is selected.

**Hold down the TIMER OFF button for more than 2 seconds**




- TIMER OFF appears on the display. The timer is disabled from the next scheduled program.

**To turn the timer back ON, hold down the TIMER OFF button for more than 2 seconds**



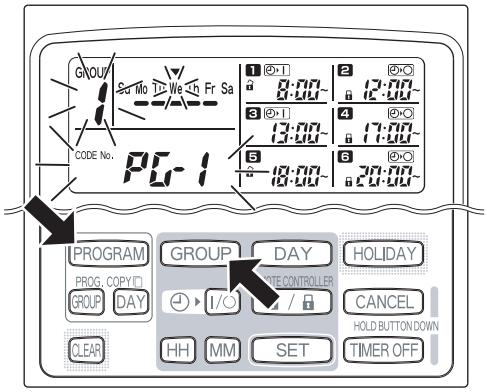

- TIMER OFF goes out and the timer is enabled from the next scheduled program.

3

# 5. Schedule Timer

## ■ How to Clear Programs

Press the PROGRAM button.

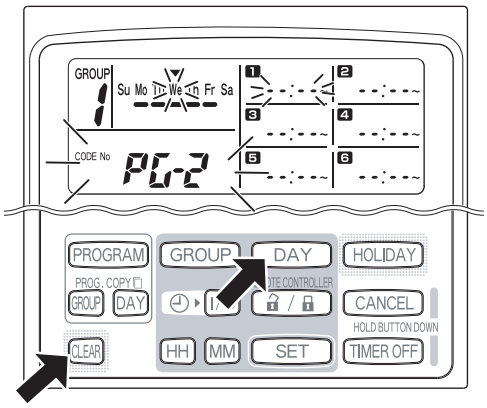



- When the PROGRAM button is pressed, the group No. and the present day of the week start blinking and the present time indication changes to a blinking “PG-1”.
- Press the GROUP button to select a group to clear.

**NOTE**

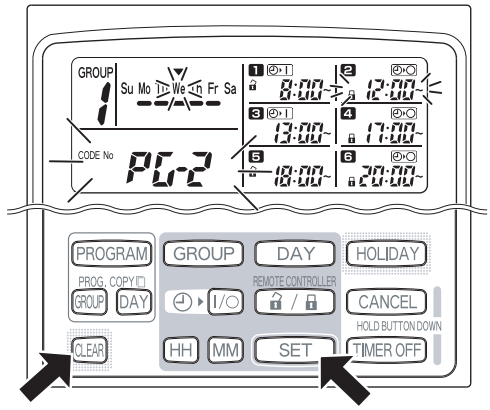
- Group selection may be disabled during installation. If so, proceed to the next step.
- Holding down the CANCEL button for more than 2 seconds returns the program to the point prior to pressing the PROGRAM button. (All operations made up until that point are cleared.)

### To cancel specific days



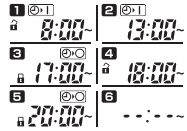

- Select a day to cancel using the DAY button and press the CLEAR button. All settings in programmed operations 1 through 6 are cleared. The display appears as shown above.
- Press the PROGRAM button to enter the clear operation. The normal display returns without the program schedule marker (▬) underneath the days of the week.

### To cancel individual programs on specific days




- Select a day and press the SET button. Programmed operations 1 through 6 start blinking in rotation, therefore press the CLEAR button when the programmed operation to clear starts blinking. (The remaining programmed operations are automatically arranged in the order of earliest time first.)
- Press the PROGRAM button to enter the clear operation. The normal display returns.

Example:
Display after clearing programmed operation 2 above

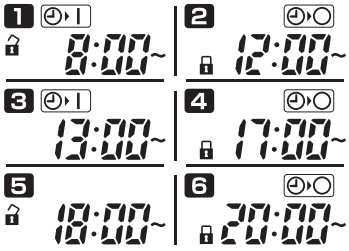


# 5. Schedule Timer

## ■ Schedule Timer and Air Conditioner Operation

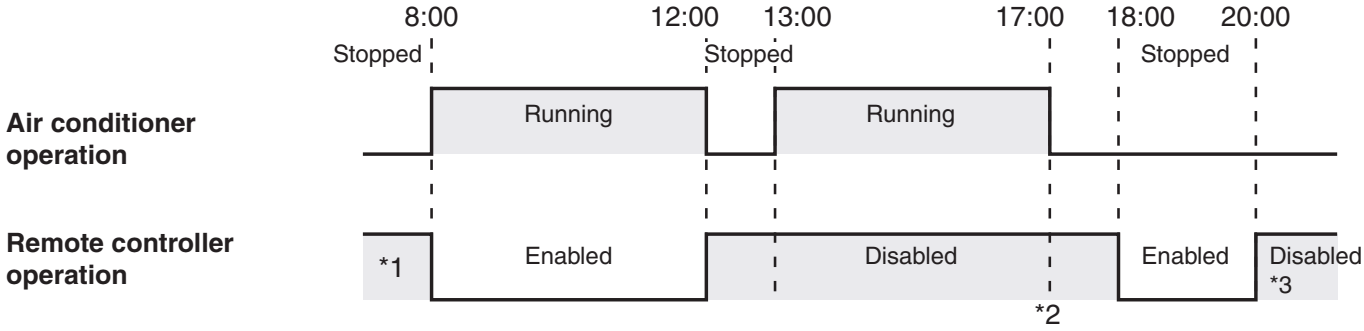
Air conditioners operate either according to operations programmed from the schedule timer (starting/stopping and remote control operation enable/disable) or according to a connected remote controller or system controller.

**Schedule timer settings (Example)**




**Operation without system controller operation**

- If remote controller operation is enabled, the air conditioner can be started/stopped from the remote controller. (The air conditioner responds to the most recently pressed button.)



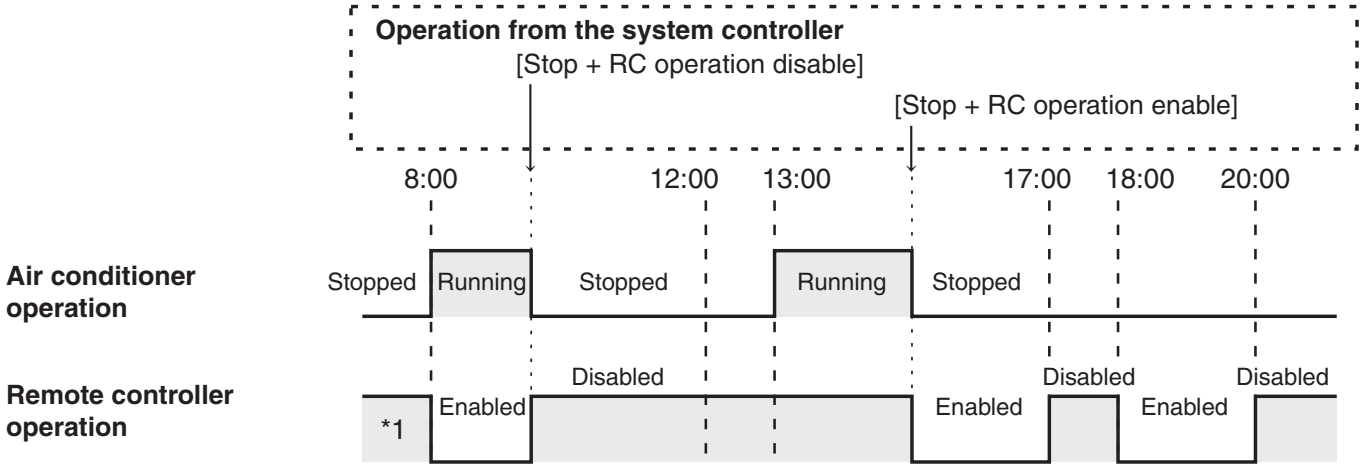

*1 Whether remote controller operation is enabled or disabled depends on the setting of the previous day.

*2 Since remote controller operation is disabled, operation remains disabled.

*3 The remote controller remains disabled the next day and thereafter until it is enabled in the remote controller operation enable/disable setting.

**Operation with system controller operation**

- If remote controller operation is enabled, the air conditioner can be started/stopped from the remote controller. (The air conditioner responds to the most recently pressed button.)
- The remote controller operation enable/disable set from the system controller (Centralized control 1 to 4) is canceled according to programmed operations.




*1 Whether remote controller operation is enabled or disabled depends on the setting of the previous day.

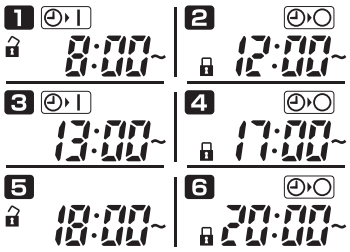
# 5. Schedule Timer

## ■ Power Outages

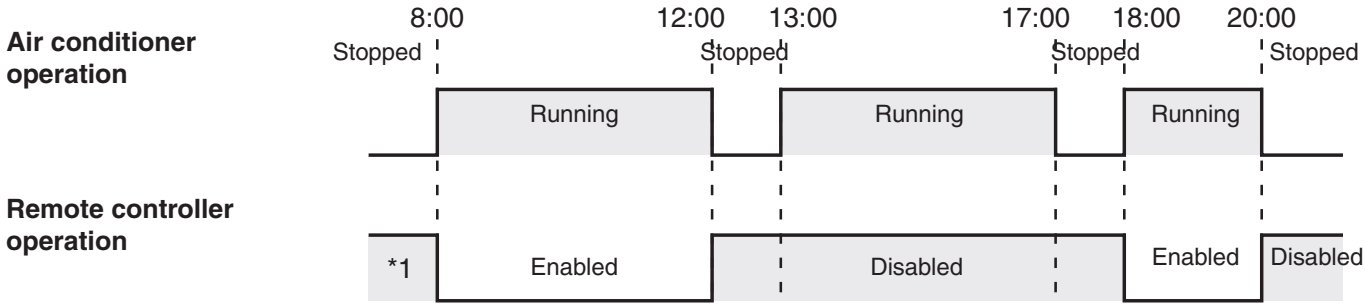
If the air conditioner is running when power is lost, the air conditioner remains OFF when power is restored. Also, if remote controller operation was disabled when power was lost, it is enabled for a few minutes when power is restored.

- Programmed operations scheduled for times that come after power is restored run as usual.
- Program settings are retained in the non-volatile memory of the schedule timer, therefore they are not cleared in the event of a power outage. Also, the present time and today's day of the week are retained for a maximum of 100 hours by the internal battery.

**Schedule timer settings (Example)**

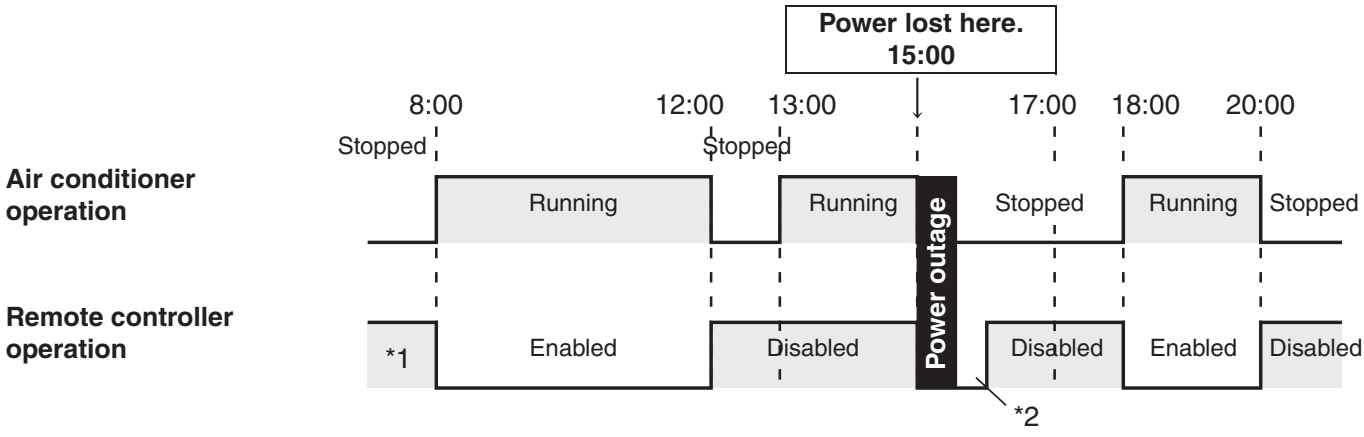



**Operation when power is not lost**




*1 Whether remote controller operation is enabled or disabled depends on the setting of the previous day.

**Operation when power is lost at 15:00 and subsequently restored**




*1 Whether remote controller operation is enabled or disabled depends on the setting of the previous day.

***2 Remote controller operation is enabled for a few minutes after power is restored.**

# 5. Schedule Timer

## ■ Troubleshooting

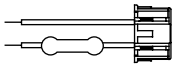
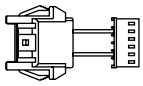
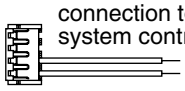
Before requesting servicing, check the following.

| | Trouble | Cause/Remedy |
|---|---|---|
| Check before requesting servicing | SC An blinks on the display. | The schedule timer is performing initial communications with connected indoor units. Wait for communications to finish. |
| | Air conditioners do not operate as scheduled when the set time comes. | The timer has been disabled. (Refer to pages 3-70 and 3-80.)<br>A holiday has been scheduled. (Refer to page 3-76.) |
| | Air conditioners can be started and stopped from the remote controller even though the program disables remote controller operation. | Power to the air conditioner was lost and subsequently restored. (Refer to page 3-80.) |
| | 88:88 blinks in the present time display area. | Power to the air conditioner was lost for a long period of time.<br>Set the present time and today's day of the week again. (Refer to pages 3-66 and 3-67.) |

If trouble persists despite taking the above action, stop the schedule timer, turn off the unit and report the serial number and problem to your dealer. Never service the unit yourself as this is dangerous.

# 5. Schedule Timer

## ■ Accessories for Schedule Timer

| No. | Supplied parts | Q'ty |
|---|---|---|
| 1 | T10 power wire  (with current fuse) *1 | 1 |
| 2 | T10 relay wire *2  | 1 |
| 3 | Power wire for connection to system controller  | 1 |
| 4 | Screws M4 × 30 | 1 |

| No. | Supplied parts | Q'ty |
|---|---|---|
| 5 | Spacers | 2 |
| 6 | Wire joints | 6 |
| 7 | Operation manual | 1 |
| 8 | Installation manual | 1 |

*1 If the fuse blows as a result of a wiring short-circuit, miswiring, or overcurrent, replace it with a 125 V, 0.1 A fuse.

*2 Use with 3-series type (Fig. 3-47).

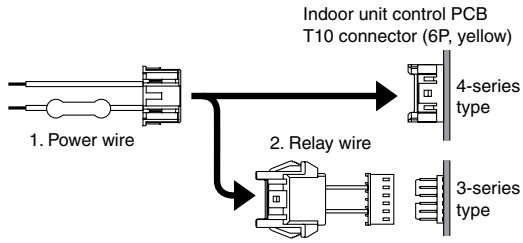



**Fig. 3-47**

## ■ Installing the Schedule Timer

<Note 1> Avoid twisting the inter-unit control wiring or the input/output wiring together with power or other wiring, and avoid running them in the same metal conduit. Doing so can cause malfunction.

<Note 2> Install the schedule timer at a location away from any sources of electrical noise.

<Note 3> Install a noise filter or take other appropriate action if electrical noise affects the power supply circuit of the unit.

(1) Open the panel on the schedule timer unit. Insert a standard (flat-head) screwdriver or similar tool into the notches on the bottom of the schedule timer unit to open and remove the back case.

(2) Use the 2 supplied M4 small screws and install the schedule timer back case onto the switch box. Before installing, use a screwdriver or similar tool to press on and open the screw holes that correspond to the JIS box that is used. When fastening the case, use spacers and do not tighten the screws too much. If the schedule timer does not fit tightly against the wall, cut the spacers as required to make adjustments.

(3) Connect the supplied power wire (2-core) and inter-unit control wire (3-core) to the schedule timer unit. (Refer to "Wiring the Schedule Timer.")

(4) Align the schedule timer unit with the tabs on the back case and press to install it.

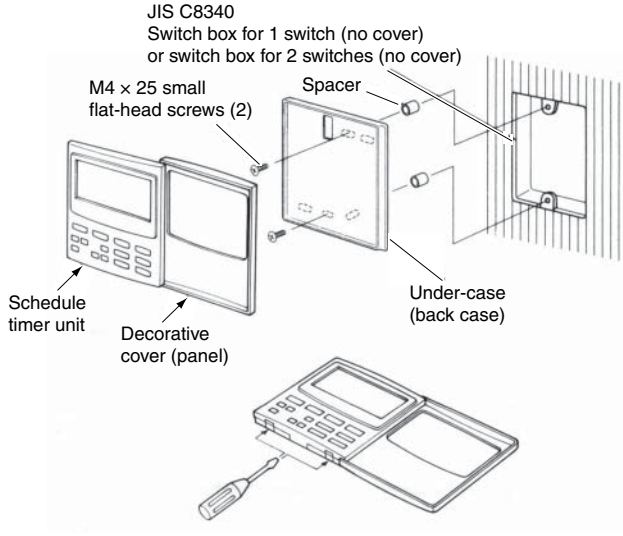



**Fig. 3-48**

# 5. Schedule Timer

## ■ Installation of Connected Schedule Timers

When installing schedule timers (remote controller switches, system controllers, etc.) onto the wall, use the method shown in Figs. 3-49 and 3-50.

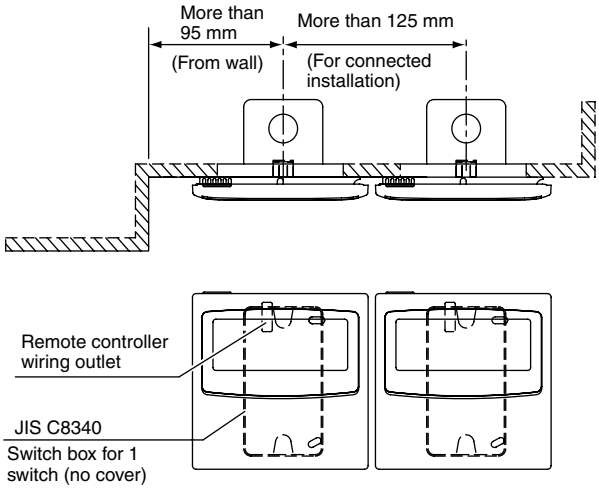
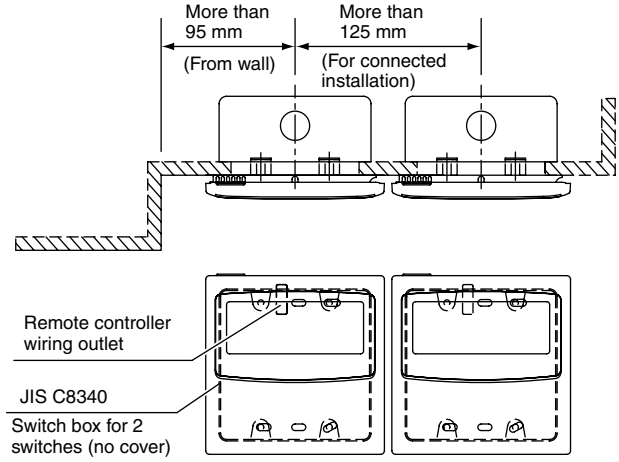



**Fig. 3-49**




* For maintenance reasons, leave a gap of 25 mm or more between the remote controller switch and schedule timer if they are arranged in parallel above/below each other.

**Fig. 3-50**

## ■ Wiring the Schedule Timer

- Before beginning wiring
- – Use 0.5 – 2 $mm^2$ wires for field supply wiring.
- – For inter-unit control wiring, use signal wires that allow the remote controller wiring to be differentiated from the power wiring, and take care to prevent miswiring. **(Miswiring will damage the schedule timer.)**
- – Check that the schedule timer communications wiring and power wiring are connected correctly. (Fig. 3-51)

<Basic Wiring Diagram>

- Route the A/C inter-unit control wiring for central control as shown in the figure at right.
- The maximum number of indoor units that can be connected to a single system is 64. The maximum number of outdoor units is 30.
- The maximum number of schedule timer units that can be connected is 8. (A maximum of 10 schedule timer units and other central control devices can be connected.)

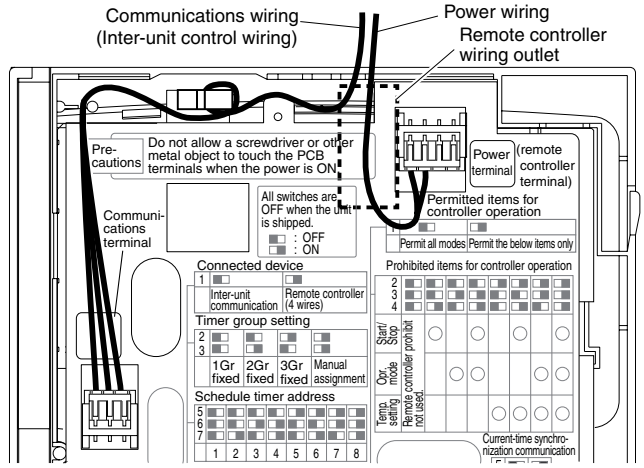



**Fig. 3-51**

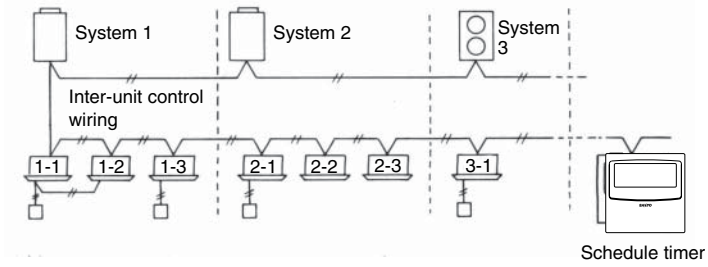



**Fig. 3-52**

**NOTE** Depending on the model of A/C, a local adapter may be required.

# 5. Schedule Timer

- Wiring

The schedule timer wiring can be connected by the following two methods. Select one of these connection methods according to the actual installation location.
When wiring, extend the lengths of the wires using wire joints (provided) and extension wires (field supply).

**CAUTION**

**When installing multiple schedule timers, avoid the use of cross-over wiring.**

- Connection diagram (Be sure to use the provided wires as the power wiring.)

**If a system controller is also installed:**

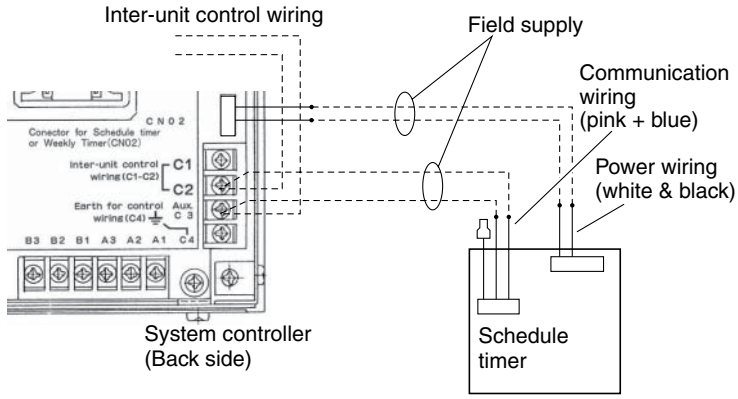



**Fig. 3-53**

Connect the wires for the schedule timer inter-unit control wiring (see Note below) to the C1 and C2 terminals on the system controller terminal board. Connect the system controller power wiring to CN02 and to the schedule timer power wires (white + black).

- The inter-unit control wiring has no polarity. The wiring may be connected in either direction to C1 and C2.
- The power wiring has no polarity. The wiring may be connected in reverse.
- **The length of the power wiring must be no more than 100 m.**

**Note: The inter-unit control wires are pink + blue + blue (using wire joint crimping). Use pink + blue wires.**

**If a system controller is not installed (power is supplied from the indoor unit):**

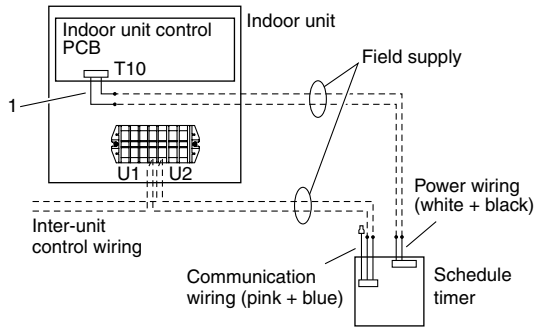



**Fig. 3-54**

If power is supplied from the indoor unit control PCB of a nearby indoor unit, connect the provided T10 terminal connection wires to the T10 terminal on the indoor unit control PCB, and to the schedule timer power wires.

- The inter-unit control wiring has no polarity. The wiring may be connected in either direction to U1 and U2.
- If necessary, use a relay wire when connecting the wiring to the indoor unit control PCB.
- The power wiring has no polarity. The wiring may be connected in reverse.
- **The length of the power wiring must be no more than 200 m.**

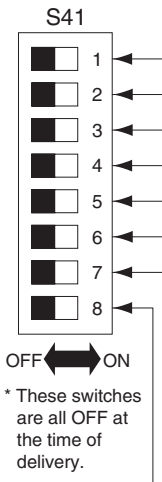
**NOTE**

The only functions of the schedule timer are indoor unit ON/OFF and remote controller enable/disable operations. It is therefore recommended that during installation, a system controller, remote controller, or similar device be installed next to the schedule timer so that the operation mode and other information can be checked.
(If the system controller or other central control device is not present, the schedule timer cannot be used in combination with a system that does not utilize remote controllers.)

# 5. Schedule Timer

## ■ About the Setting Switches

Complete the switch settings before turning ON the schedule timer power.




* These switches are all OFF at the time of delivery.

**Connection (1)**

This switch should be OFF for normal use. **Turn S41 switch ON only for systems that are compatible with the former weekly timer service.**

**Timer Group Settings (2, 3)**

| Function | 2 | 3 |
|---|---|---|
| 1 timer group – fixed | OFF | OFF |
| 4 timer group – fixed | OFF | ON |
| 8 timer group – fixed | ON | OFF |
| Manual group setting | ON | ON |

What is a timer group?
This is a group of indoor units, created by dividing the central control addresses of the 64 indoor units that are connected to the inter-unit control wiring, and assigning a timer program to each group.

**Central Control Main/Sub Switching (4)** Sub: OFF Main: ON

(1) Set to "sub" (OFF) when using together with the AMY adapter, communications adapter, intelligent controller, multi-controller, LON I/F, and system controller.
(2) In cases other than (1) above, when using together with an ON/OFF central controller, set to "main" (ON) when only 1 schedule timer unit is used.
(3) In cases other than (1) above, and when using with multiple schedule timer units, set only 1 unit to "main" (ON) and set the remainder to "sub" (OFF).

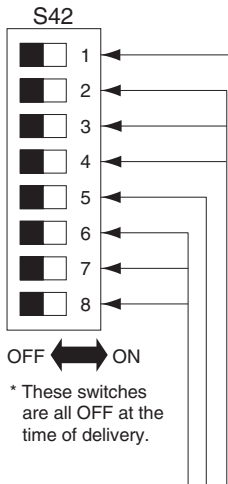
**Schedule Timer Address Settings (5, 6, 7)**

A maximum of 8 schedule timer units can be connected to the inter-unit control wiring. If multiple units are connected, use the setting switches and allocate the addresses, taking care to avoid duplication.

| Function | 5 | 6 | 7 |
|---|---|---|---|
| Address 1 | OFF | OFF | OFF |
| Address 2 | OFF | OFF | ON |
| Address 3 | OFF | ON | OFF |
| Address 4 | OFF | ON | ON |
| Address 5 | ON | OFF | OFF |
| Address 6 | ON | OFF | ON |
| Address 7 | ON | ON | OFF |
| Address 8 | ON | ON | ON |

**Holiday and Operation Disable Settings for Each Group (8)**

When this setting switch is OFF, units are all controlled together. When this switch is ON, the units are controlled by the settings for each timer group.




* These switches are all OFF at the time of delivery.

**Remote Controller Enable Items (1)**

If remote controller enable/disable is used, this switch sets the range for remote controller enable (cancel).
**Enable all items* that can be controlled with the remote controller.**
**→ OFF**
**Enable only the items determined by setting switches 2, 3, and 4.**
**→ ON**
This switch should be OFF for normal use, or when remote controller enable/disable is not used.

* This refers to the following items: start/stop, operation mode, temperature setting, flap, and fan speed.

**Remote Controller Disable Item Switches (2, 3, 4)**

When timer remote controller disable is used, set the remote controller disable item switches according to the items for which remote controller operation will be disabled.

| Remote controller disabled items | | 2 | 3 | 4 |
|---|---|---|---|---|
| Remote controller disable not used | | OFF | OFF | OFF |
| Start/stop | Central 1 | OFF | OFF | ON |
| Operation mode | Central 4 | OFF | ON | OFF |
| Operation mode + Start/stop | | OFF | ON | ON |
| Temperature setting | | ON | OFF | OFF |
| Temperature setting + Start/stop | | ON | OFF | ON |
| Temperature setting + Operation mode | Central 3 | ON | ON | OFF |
| Temperature setting + Operation mode + Start/stop | Central 2 | ON | ON | ON |

Central 1 – 4 are the designations for the remote-controller disable modes for the system controller.

**Simultaneous time communications (5)** Disabled: OFF Enabled: ON

When multiple schedule timers are installed, set this switch to ON to perform time settings for multiple units simultaneously. One minute after the time is set, the time at the other schedule timers will change to match the set time. (Ordinarily this switch is OFF.)

**Spare (6, 7, 8)**

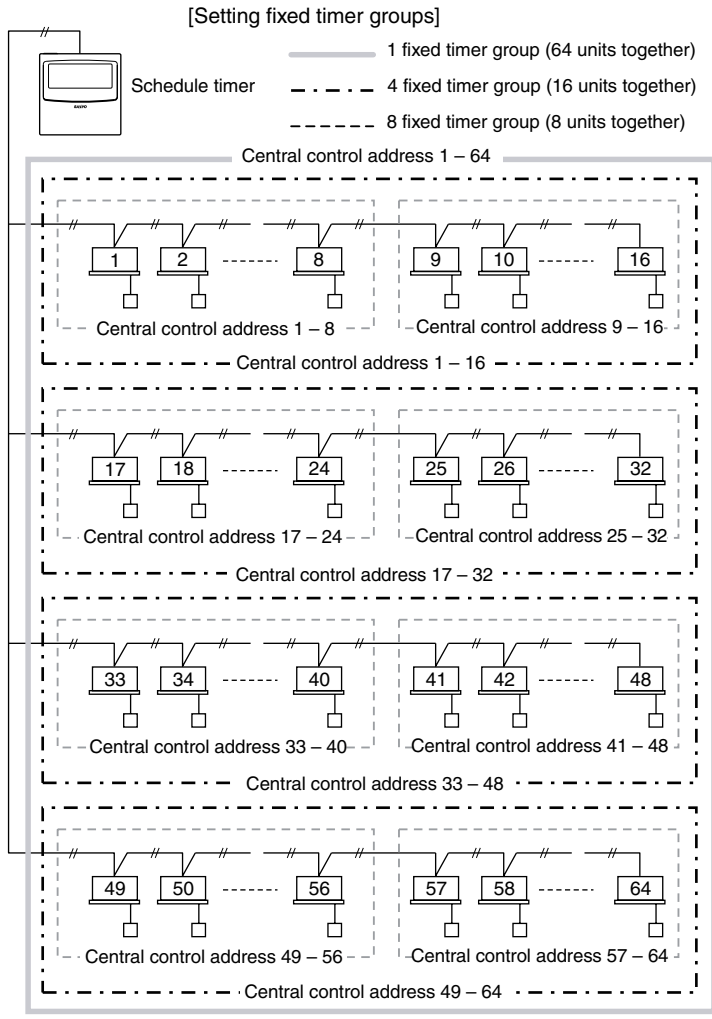
Be sure that these switches are OFF when the system is used.

3

# 5. Schedule Timer

## ■ Creating Timer Groups

The schedule timer can be set for 6 time status changes. These can be used to create up to 8 groups (timer groups). For systems in which schedule timers are used, set the timer groups to match the central control addresses of the indoor units that will be subject to group timer control.
The timer-group settings for the schedule timer involve assignment of central control addresses. Therefore, use the system controller (or other central control device) or wired remote controllers to set the central control addresses of the indoor units, then make the schedule timer settings.




3

- **Procedure for making fixed timer group settings (fixed groups)**

(1) First, use a different central control device (system controller or other device) or the wired remote controllers to set the central control addresses, as assigned in the figure above, to the indoor units that will be subject tom group timer control.

(2) Next, use S41 switches 2 and 3 to set the number of timer groups you wish to create.

(3) Finally, turn ON the schedule timer power. Initial communications are performed. (SCAn blinks in the display.) The normal display appears after several minutes, and the timer group settings are confirmed.

- **Procedure for making manual timer group settings (manual group assignments)**

Manual timer group settings allow central control addresses to be assigned freely within the timer groups.

(1) Turn ON S41 setting switches 2 and 3, then turn ON the power. Restart and initial communications are performed. (SCAn blinks in the display.) The normal display appears after several minutes.

(2) When the normal display appears, press and hold the schedule timer CLEAR button, the timer ON/OFF button, and the lock button for 4 seconds or longer. “Ad-01” appears, blinking, in the current time display. (Ad indicates “address” and 01 is the central address number.)

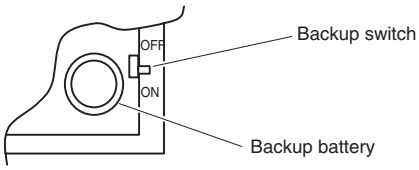
(3) Use the GROUP button in the area to select the timer group. Then use the DAY button in the area to select the central control address to assign and register for that timer group. Press the SET button to register the selected central control address.

(4) To continue registering addresses, repeat step (3). (Central control address numbers will be added to the right side of the LCD display.) To cancel a registered central control address, use the GROUP button in the area to select the timer group, then use the DAY button in the area to select the central control address and press the CLEAR button.

(5) Repeat steps (3) - (4) for each timer group. When registration is completed, press the timer button. The schedule timer restarts automatically and performs initial communications. (SCAn blinks in the display.) The normal display appears after several minutes, and the manually assigned timer group settings are confirmed.

### ■ Memory Back-Up Switch

After installation is completed, check that the backup switch on the reverse side of the schedule timer PCB is turned to ON. (The backup battery will retain the current time for up to 100 hours.)




### ■ Checking the Central Control Addresses and Operating the Units that are Controlled by the Schedule Timer

The schedule timer communicates with the indoor units to check which central control addresses can be controlled with the current timer control. The schedule timer can then be used to start and stop these units.

(1) Press and hold the schedule timer button, TIMER OFF button, and CLEAR button for 4 seconds or longer. “Ad-(central control address)” appears in sequence, blinking.

(2) Use the GROUP button in the area to display the blinking central control addresses in sequential order. In this way, it is possible to check which central control addresses in the displayed timer group can be operated by the timer.

(3) With the selected timer group displayed, press the timer button. Each time the button is pressed the indoor units in the displayed timer group start or stop. Pressing the button in this mode permits all items (operation start/stop, operation mode, temperature setting items) at the indoor units in the displayed timer group where remote controller prohibit is in effect.

(4) After checking the addresses and operating the units, press and hold the CANCEL button for 2 seconds or longer. The schedule timer display returns to the normal display and all controllable indoor units stop.

### ■ Explanation to Customers

- After work is completed, present the Operation Manual and Information for the Person in Charge of Installation (Electrical) Work to the customer.
- Explain to the customer the methods for use of the system, as described in the Operation Manual.

# 5. Schedule Timer

## ■ Installation Work Plan

- Use the wired remote controller to check the unit No. of the indoor units.
  (Start the A/C unit with the wired remote controller, then press the remote controller UNIT SELECT button once to display the unit No. of the main unit.)

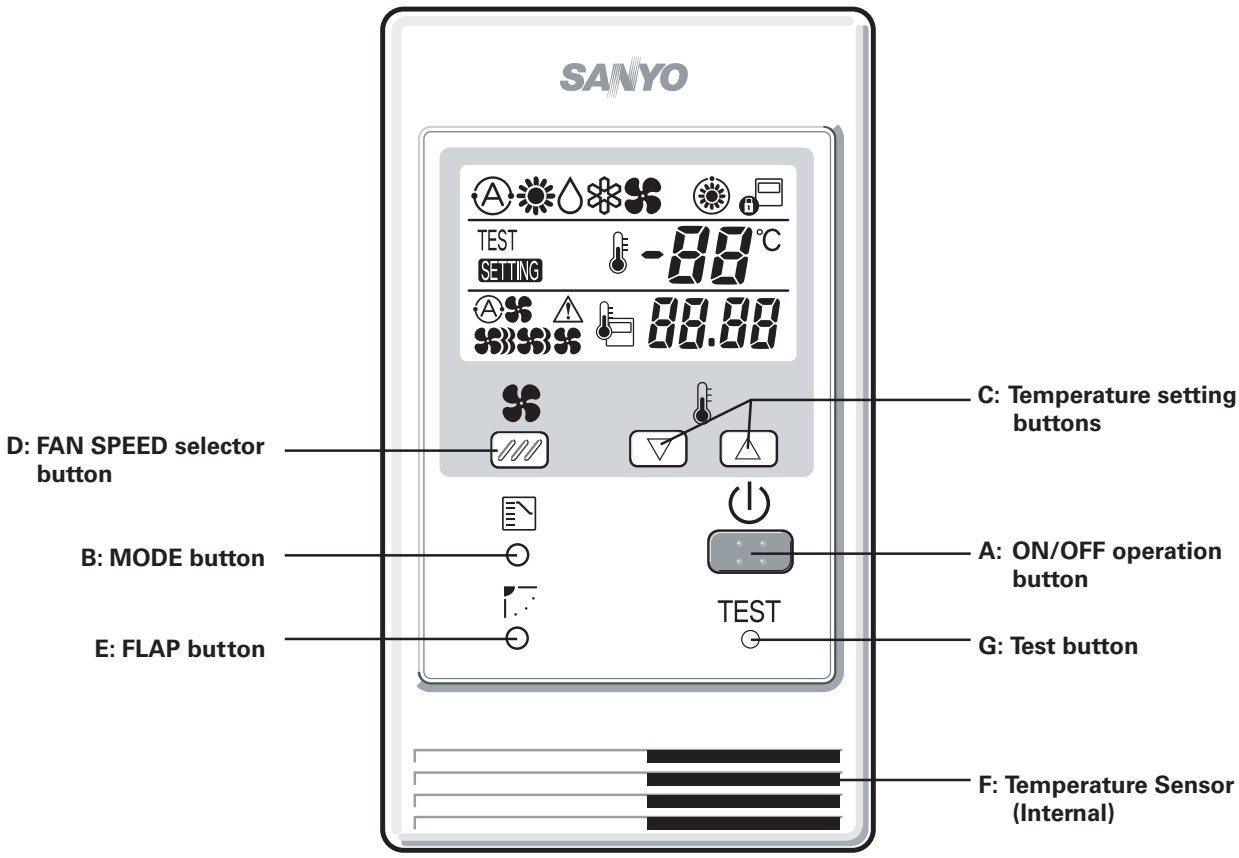
| Schedule timer | | | Central control addresses | Indoor unit Unit No. System - Indoor | Room name |
|---|---|---|---|---|---|
| Fixed timer group | | | | | |
| 1 | 4 | 8 | | | |
| 1<br>At the time of shipment | 1 | 1 | 1 | - , - | |
| | | | 2 | - , - | |
| | | | 3 | - , - | |
| | | | 4 | - , - | |
| | | | 5 | - , - | |
| | | | 6 | - , - | |
| | | | 7 | - , - | |
| | | | 8 | - , - | |
| | | 2 | 9 | - , - | |
| | | | 10 | - , - | |
| | | | 11 | - , - | |
| | | | 12 | - , - | |
| | | | 13 | - , - | |
| | | | 14 | - , - | |
| | | | 15 | - , - | |
| | | | 16 | - , - | |
| | 2 | 3 | 17 | - , - | |
| | | | 18 | - , - | |
| | | | 19 | - , - | |
| | | | 20 | - , - | |
| | | | 21 | - , - | |
| | | | 22 | - , - | |
| | | | 23 | - , - | |
| | | | 24 | - , - | |
| | | 4 | 25 | - , - | |
| | | | 26 | - , - | |
| | | | 27 | - , - | |
| | | | 28 | - , - | |
| | | | 29 | - , - | |
| | | | 30 | - , - | |
| | | | 31 | - , - | |
| | | | 32 | - , - | |
| | 3 | 5 | 33 | - , - | |
| | | | 34 | - , - | |
| | | | 35 | - , - | |
| | | | 36 | - , - | |
| | | | 37 | - , - | |
| | | | 38 | - , - | |
| | | | 39 | - , - | |
| | | | 40 | - , - | |
| | | 6 | 41 | - , - | |
| | | | 42 | - , - | |
| | | | 43 | - , - | |
| | | | 44 | - , - | |
| | | | 45 | - , - | |
| | | | 46 | - , - | |
| | | | 47 | - , - | |
| | | | 48 | - , - | |
| | 4 | 7 | 49 | - , - | |
| | | | 50 | - , - | |
| | | | 51 | - , - | |
| | | | 52 | - , - | |
| | | | 53 | - , - | |
| | | | 54 | - , - | |
| | | | 55 | - , - | |
| | | | 56 | - , - | |
| | | 8 | 57 | - , - | |
| | | | 58 | - , - | |
| | | | 59 | - , - | |
| | | | 60 | - , - | |
| | | | 61 | - , - | |
| | | | 62 | - , - | |
| | | | 63 | - , - | |
| | | | 64 | - , - | |

3

# 6. Simplified Remote Controller

**Simplified Remote Controller / RCS-KR1AG**

## ■ Operation Buttons




| | |
|---|---|
| **A : ON/OFF operation button** | This button is for turning the air conditioner on and off. |
| **B : MODE button** | Use this button to select one of the following five operating modes. |
| **(AUTO)** | Ⓐ: Used to automatically set cooling or heating operation. Only for single heat pump type (Temperature range: 17 ~ 27 °C) |
| **(HEAT)** | ☼: Used for normal heating operation. Only for heat pump type (Temperature range: 16 ~ 26 °C) |
| **(DRY)** | ♢ : Used for dehumidifying without changing the room temperature. (Temperature range: 18 ~ 30 °C) |
| **(COOL)** | ❄ : Used for normal cooling operation. (Temperature range: 18 ~ 30 °C) |
| **(FAN)** | ✣ : Used to run the fan only, without heating or cooling operation. |
| **C : Temperature setting buttons** | △ : Press this button to increase the temperature setting.<br>▽ : Press this button to decrease the temperature setting. |

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## 6. Simplified Remote Controller

| | |
|---|---|
| **D : FAN SPEED selector button** | |
| **(AUTO)** | Ⓐ : The air conditioner automatically decides the fan speed. |
| **(HI)** | : High fan speed |
| **(MED)** | : Medium fan speed |
| **(LO)** | : Low fan speed |
| **E : FLAP button** | 1. Use this button to set the airflow direction to a specific angle.<br>• In the Cool mode and Dry mode, if the flaps are set in a downward position, condensation may form and drip around the vent.<br>• Do not move the flap with your hands. |
| **NOTE** | This function is available only for models X, S, LD, T and K. |
| **F : Temperature sensor (Internal)** | Although the temperature sensor in the indoor unit normally detects the temperature, this internal sensor can detect the temperature around the remote control unit. For more information, contact the dealer where you made the purchase. (Do not make any settings if group control is being used.) |
| **G : TEST button** | This button is used only when servicing the air conditioner. |
| **CAUTION** | **Do not use the TEST button for normal operation.** |

**NOTE** When 2 remote control units are being used in 1 group control* system, the most recent button that is pressed on any remote control unit is effective.

* Group control means that maximum up to 8 indoor units can be concurrently controlled with a remote control unit.

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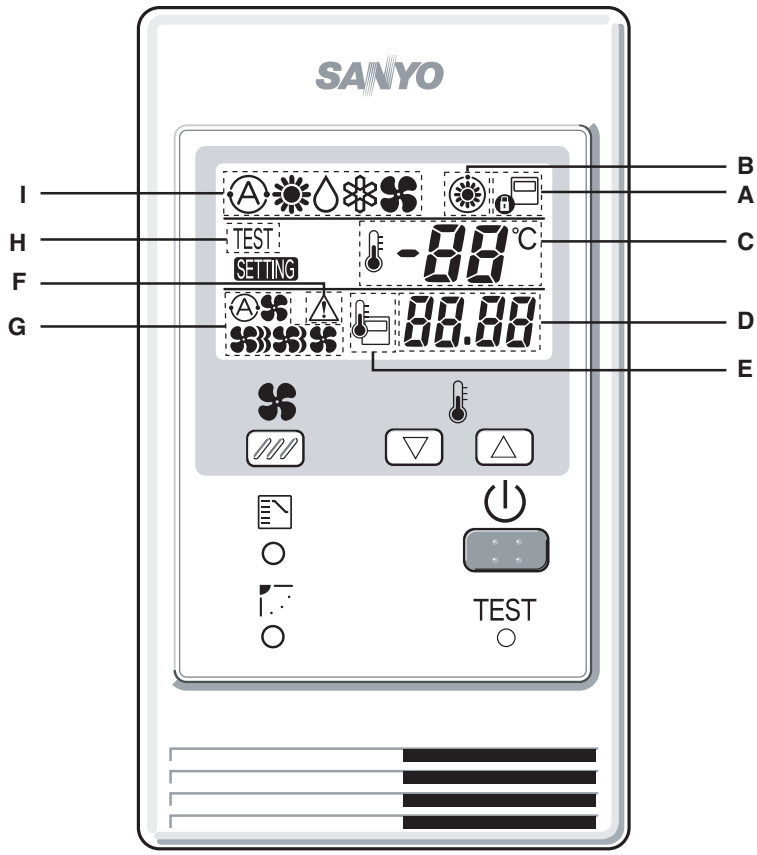
# 6. Simplified Remote Controller

## ■ Display




### Description

**A:** This is displayed to indicate that the system controller is being used for control.

When indicator is flashing on the display, the operation is not accepted by the system controller.

**B:** When the unit is in heating standby status, the indicator appears.

**C:** This displays the temperature setting.

**D:** This displays alarm messages when an error occurs.

**E:** This is displayed when using the temperature sensor in the remote control unit.

**F:** This is displayed only if an abnormality occurs within a unit.

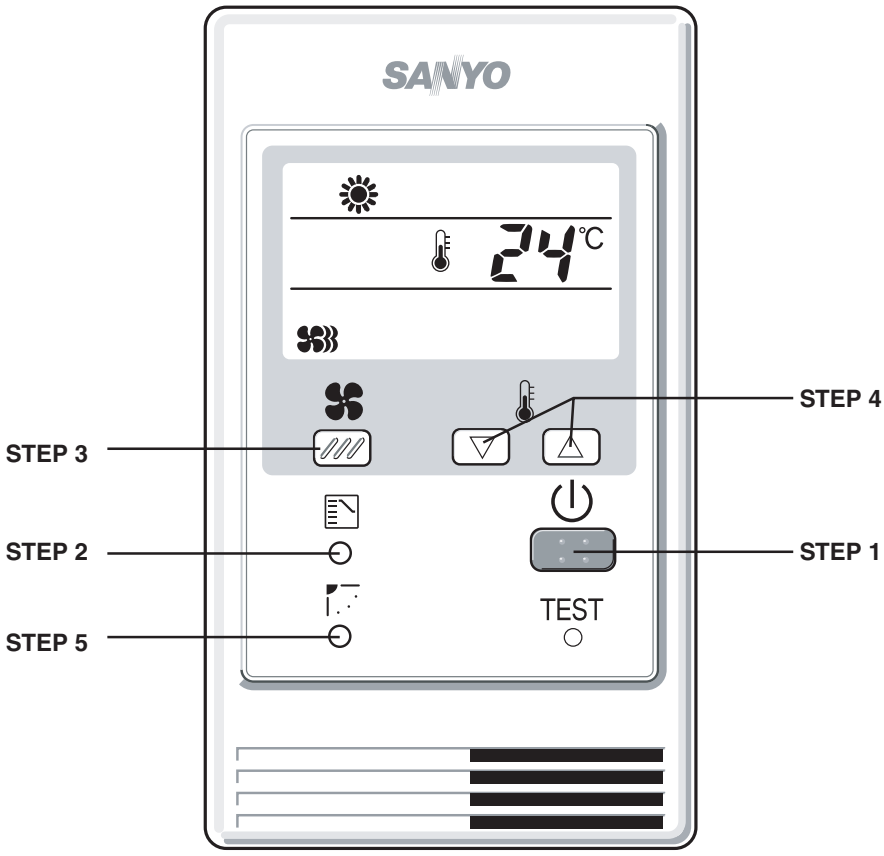
**G:** The currently selected FAN SPEED is displayed.

**H:** When the TEST button is pressed, the TEST indicator appears.

**I:** The currently selected operation mode is displayed.

# 6. Simplified Remote Controller

## ■ Operation






**NOTE** To warm up the system, the power mains must be turned on at least five (5) hours before operation.

**STEP 1** **To start the air conditioner**
Press the ON/OFF operation button ( ⏻ ).

**STEP 2** **Setting the mode**
Press the MODE button ( ▤ ) to select the mode of your choice.
[Ⓐ(AUTO), ☀ (HEAT), 💧 (DRY), ❄ (COOL) or (FAN)]

**STEP 3** **Setting the fan speed**
Press the FAN SPEED button ( ) to select the fan speed of your choice.
[ Ⓐ (AUTO), (HI.), (MED.) or (LO.)]
If AUTO is selected, the fan speed switches automatically.

**STEP 4** **Setting the temperature**
Use the ▽ or △ but ton as appropriate to change the temperature setting as desired.
(▽ reduces the temperature, and △ increases the temperature.)

**STEP 5** **To stop the air conditioner**
Press the ON/OFF operation button ( ⏻ ) again.

# 6. Simplified Remote Controller

## ■ Troubleshooting

If your air conditioner does not work properly, first check the following points before requesting service. If It still does not work properly, contact your dealer or a service center.

| Trouble | Possible Cause | Remedy |
|---|---|---|
| Air conditioner does not run at all. | 1. Power failure<br>2. Leakage circuit breaker has tripped.<br>3. Line voltage is too low.<br>4. Operation button is turned off.<br>5. The remote control unit or heat pump is malfunctioning. (ERROR and characters such as EI, PI, FI, etc., appear on the display.) | 1. Restore power.<br>2. Contact service center.<br>3. Consult your electrician or dealer.<br>4. Press the button again.<br>5. Consult your dealer. |
| Compressor runs but soon stops. | 1. Obstruction in front of condenser coil | 1. Remove obstruction. |
| Poor cooling (or heating) performance | 1. Dirty or clogged air filter<br>2. Heat source or many people in room<br>3. Doors and/or windows are open.<br>4. Obstacle near air intake or air discharge port<br>5. Thermostat is set too high for cooling (or too low for heating).<br>6. (Outdoor temperature is too low.)<br>7. (Defrosting system does not work.) | 1. Clean the air filter to improve the airflow.<br>2. Eliminate heat source if possible.<br>3. Shut them to keep the heat (or cold) out.<br>4. Remove it to ensure good airflow.<br>5. Set the temperature lower (or higher).<br>6. (Try to use a back-up heater.)<br>7. (Consult your dealer.) |
| ⚠ is displayed. | 1. Trouble in the system | 1. Contact service center. |

## ■ Tips for Energy Saving

**Avoid**

- **Do not block the air intake and outlet of the unit. If either is obstructed, the unit will not work well, and may become damaged.**
- Do not let direct sunlight into the room. Use sunshades, blinds or curtains. If the walls and ceiling of the room are warmed by the sun, it will take longer to cool the room.

**Do**

- Always try to keep the air filter clean. A clogged filter will impair the performance of the unit.
- To prevent conditioned air from escaping, keep windows, doors and any other openings closed.

**NOTE** **Should the power fail while the unit is running**

If the power supply for this unit is temporarily interrupted the unit will automatically resume operation (once the power is restored) with the same settings that were in effect before the power was interrupted.

# 6. Simplified Remote Controller

## ■ Parts Supplied with Simplified Remote Controller

| No. | Supplied parts | Qty |
|---|---|---|
| 1 | Simplified remote controller (comes with 200 mm wire) | |
| 2 | Machine screws M4 × 25 | 2 |
| 3 | Wood screws | 2 |

| No. | Supplied parts | Qty |
|---|---|---|
| 4 | Spacers | 2 |
| 5 | Wire joints | 5 |
| 6 | Installation manual | 1 |

## ■ Simplified Remote Controller Installation Guidelines

**Place of installation**

- Mount the simplified remote controller at a height of 1 to 1.5 meters above the floor where it can sense the average temperature of the room.
- Do not mount the simplified remote controller in a place exposed to direct sunlight or a place exposed to outside air such as near a window.
- Do not mount the simplified remote controller behind an object so that it is separated from the air circulation of the room.
- Mount the simplified remote controller within the room being air conditioned.
- The simplified remote controller must be mounted on the wall or other surface vertically.

**SWITCHING THE ROOM TEMPERATURE SENSOR**

The room temperature sensor is placed both in the indoor unit and the simplified remote controller respectively. Either sensor can be used to sense the room temperature. The indoor unit sensor is usually used.
If you use the simplified remote controller to sense the room temperature, switch the remote controller sensor switch (RCU. SNS) on the P.C.B. of the simplified remote controller from OFF to
ON. See the diagram below.

**<NOTE 1 >** Even though the simplified sub-remote controller switch is switched from OFF to ON, the sub-remote controller cannot detect the room temperature.

**< NOTE 2 >** The standard remote controller cannot detect the room temperature.

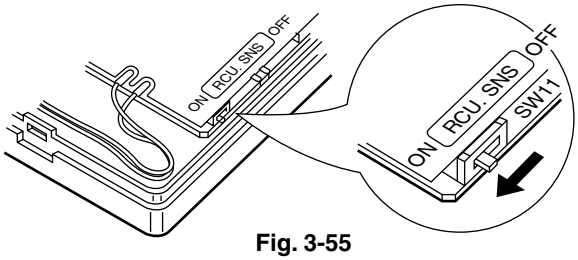



**Fig. 3-55**

## ■ How to Install the Simplified Remote Controller

< NOTE 1 > Do not twist the simplified remote controller wiring with the power wiring or run it in the same metal conduit, because this may cause malfunction.

< NOTE 2 > Install the simplified remote controller away from sources of electrical noise.

< NOTE 3 > Install a noise filter or take other appropriate action if electrical noise affects the power supply circuit of the unit.

* Use an electric junction box (supplied locally) (Fig. 3-56) for flush mounting of the simplified remote controller.

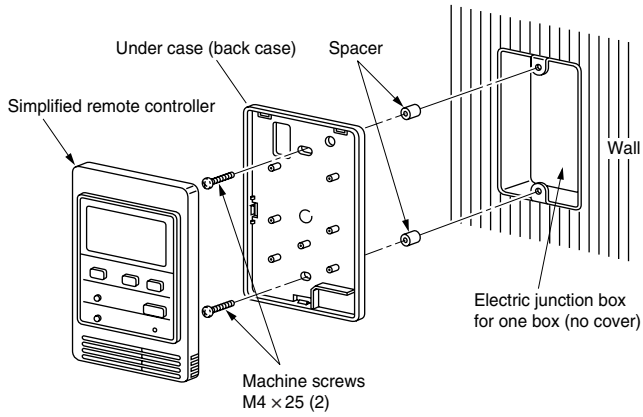



**Fig. 3-56**

# 6. Simplified Remote Controller

1. Insert a screwdriver or the like in the groove on the lower side of the simplified remote controller body to pry off the back case. (Fig. 3-57)
2. Use the 2 supplied M4 machine screws to secure the simplified remote controller back case. Prior to mounting, clear the cutouts in the back case corresponding to the holes in the wall box using a screwdriver or the like. Use the spacers and take care not to tighten the screws excessively. If the back case will not seat well, cut the spacers to a suitable thickness.
3. Connect locally supplied 3 core lead wires to the lead wires from the simplified remote controller. (See "How to wire the simplified remote controller.")

   **When connecting the locally supplied 3 core lead wires to the terminal block, check the terminal numbers in the indoor unit to make sure that the wires are correctly connected. (Fig. 3-58)**
   **(The simplified remote controller is damaged if 220 / 240 V AC is applied.)**
4. Fit the simplified remote controller to the tabs of the back case and mount it.

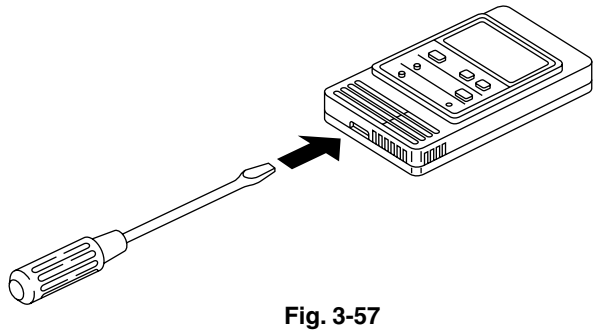
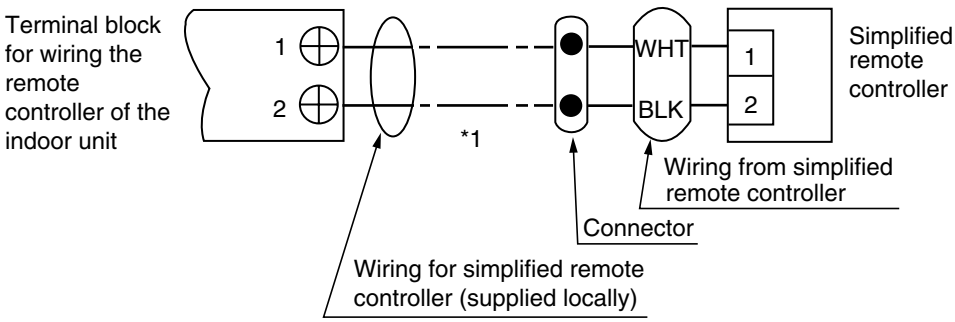


**Fig. 3-57**

## ■ How to Wire the Simplified Remote Controller

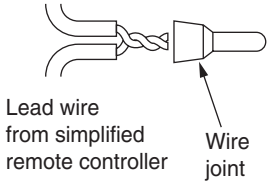
● **Connection diagram**




*1: 0.5 mm$^2$ to 1.6 mm$^2$ wires are used for lead wires.

**Fig. 3-58**

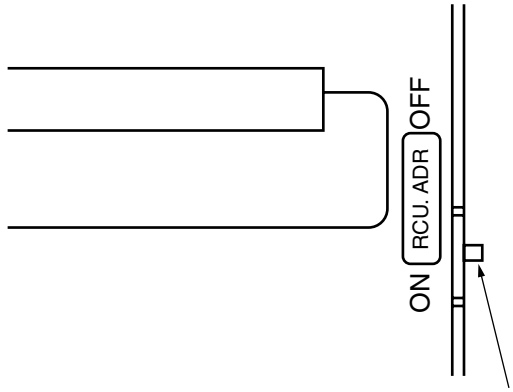
● **How to connect lead wires**

| | | |
|---|---|---|
| 2 supplied white wire joints | Lead wire from indoor unit<br>  <br>Lead wire from simplified remote controller<br>Wire joint | 1. Peel off 14 mm of the cable sheathing.<br>2. Twist the 2 wires together and crimp them together with the wire joint.<br>3. When a crimping tool is not used, solder the wires together and cover the joint with insulating tape. |

# 6. Simplified Remote Controller

## ■ Guidelines for Using 2 Simplified Remote Controllers

This multiple remote controller system controls 1 to 8 indoor units with 2 simplified remote controllers.




Remote controller address switch

**Fig. 3-59**

- **Set-up procedure**

1. One of the 2 simplified remote controllers should be set as main controller.
2. Set the address switch on the other simplified remote controller P.C.B. from OFF to ON. (Fig. 3-59)
   The simplified remote controller can now be used as a sub-remote controller.

- **Basic wiring diagram**

**Note: Make sure to connect the wires correctly or the unit may be damaged. (Fig. 3-60)**

- At right is a diagram for controlling 1 indoor unity by 2 simplified remote controllers.
- Performing group control of the multiple indoor units with 2 simplified remote controllers. The main and the sub simplified remote controllers can be installed at any indoor unit for operations.

* The main and the sub simplified remote controllers can be installed at any indoor unit for operations.

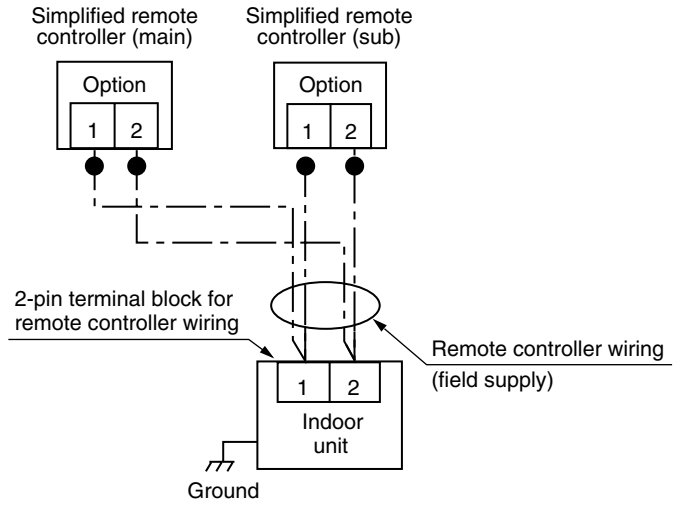



**Fig. 3-60**

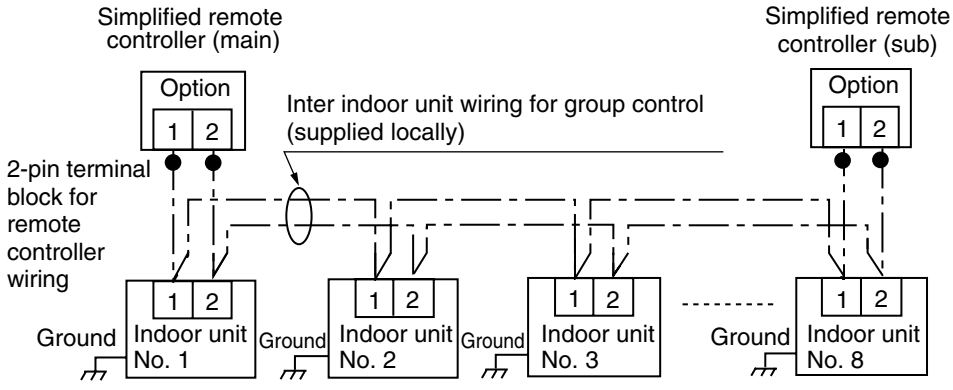



**Fig. 3-61**

## ■ Remote Controller Test Run Setting

1. Push the tip of a ball-point pen, etc. into the hole marked "TEST" for more than 4 seconds and press the ⏻ (ON/OFF) button.
   - "TEST" will appear on the crystal display during test run.
   - During test run, temperature cannot be adjusted. This button should be used only for test run.
2. Perform test run in any operation mode of "Heat," "Cool" or "Fan."

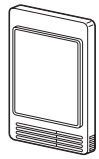
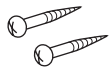
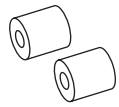
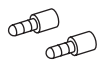
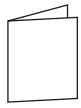
**Note:** The outdoor unit does not operate for 3 minutes after stopping operation or turning on the unit.

3. After finishing the test run, push the tip of a ball-point pen, etc. into the hole marked "TEST" again until "TEST" disappears from the crystal display.
   (The 60-minute off timer function is provided for this remote controller in order to avoid continuous test run.)

# 7. Remote Sensor

**Remote Sensor / ART-K45AG**

## ■ Parts Supplied with Remote Sensor

| No. | Supplied parts | Qty |
|---|---|---|
| 1 | Remote sensor (comes with 200 mm wire)  | 1 |
| 2 | Machine screws M4 × 25 | 2 |
| 3 | Wood screws  | 2 |
| 4 | Spacers  | 2 |
| 5 | Wire joints  | 2 |
| 6 | Clamp | 1 |
| 7 | Installation manual  | 1 |

## ■ Remote Sensor Installation Guidelines

**Place of installation**

- Mount the remote sensor at a height of 1 to 1.5 meters above the floor where it can sense the average temperature of the room.
- Do not mount the remote sensor in a place exposed to direct sunlight or a place exposed to outside air such as near a window.
- Do not mount the remote sensor behind an object so that it is separated from the air circulation of the room.
- Mount the remote sensor within the room being air conditioned.
- The remote sensor must be mounted on the wall or other surface vertically.

# 7. Remote Sensor

## ■ How to Install the Remote Sensor

**<NOTE 1 >** Do not twist the remote sensor wiring with the power wiring or run it in the same metal conduit, because this may cause malfunction.

**< NOTE 2 >** Install the remote sensor away from sources of electrical noise.

**< NOTE 3 >** Install a noise filter or take other appropriate action if electrical noise affects the power supply circuit of the unit.

- Use an electric junction box (supplied locally) (Fig. 3-62) for flush mounting of the remote sensor.

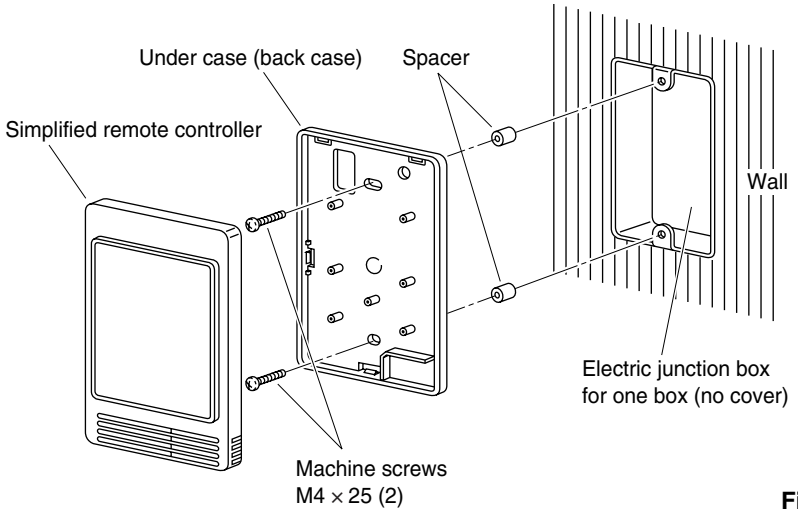



**Fig. 3-62**

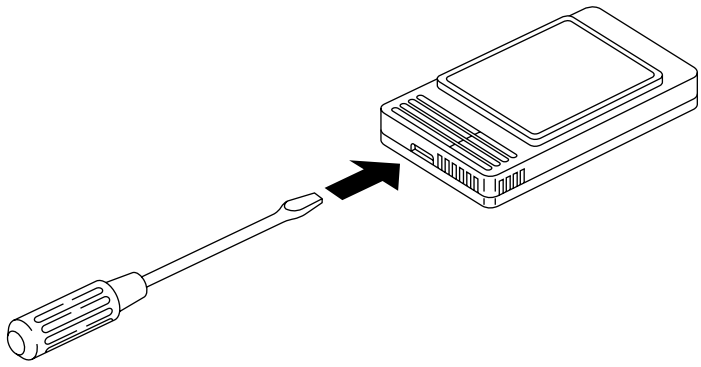


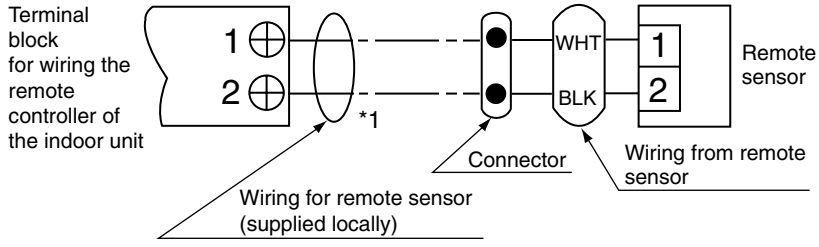
**Fig. 3-63**

1. Insert a screwdriver or the like in the groove on the lower side of the remote sensor body to pry off the back case. (Fig. 3-63)
2. Use the 2 supplied M4 machine screws to secure the remote sensor back case. Prior to mounting, clear the cutouts in the back case corresponding to the holes in the wall box using a screwdriver or the like. Use the spacers and take care not to tighten the screws excessively. If the back case will not seat well, cut the spacers to a suitable thickness.
3. Connect locally supplied 2 core lead wires to the lead wires from the remote sensor. (See "How to wire the remote sensor.")
   **When connecting the locally supplied 2 core lead wires to the terminal block, check the terminal numbers in the indoor unit to make sure that the wires are correctly connected. (Fig. 3-64) (The remote sensor is damaged if 220 / 240V AC is applied.)**
4. Fit the remote sensor to the tabs of the back case and mount it.

# 7. Remote Sensor

## ■ How to Wire the Remote Sensor

### ● Connection diagram




*1: 0.5 mm$^2$ to 1.6 mm$^2$ wires are used for lead wires.

**Fig. 3-64**

### ● How to connect lead wires

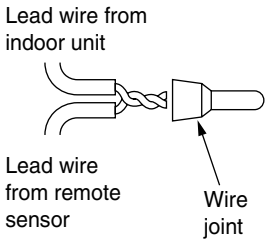
| | | |
|---|---|---|
| 2 supplied white wire joints |  | 1. Peel off 14 mm of the cable sheathing.<br>2. Twist the 2 wires together and crimp them together with the wire joint.<br>3. When a crimping tool is not used, solder the wires together and cover the joint with insulating tape. |

**Fig. 3-65**

## ■ Important Information When Using Together with Remote Controller Switch

### ● Installation method

1. Set the remote controller switch as the main remote controller.

**<NOTE >** Do not set the room temperature sensor on the remote controller switch as the remote controller sensor.

### ● Basic wiring diagram

**<NOTE >** When connecting the wires, be careful not to wire incorrectly.
(Incorrect wiring will damage the unit.)

* Wiring when controlling a single indoor unit with the remote sensor and remote controller switch:

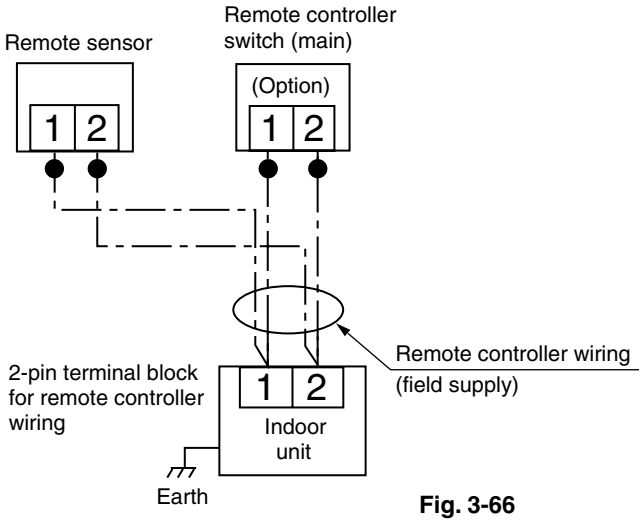



**Fig. 3-66**

## Contents

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# 1. Outdoor Unit

## 1-1. Specifications

### Unit Specifications (1)

| MODEL NAME | | | W-2WAY ECO-i Capacity Control Outdoor Unit <8, 10 horsepower> | | | | | |
|---|---|---|---|---|---|---|---|---|
| MODEL No. | | | SPW-C0705DXHN8 | | | SPW-C0905DXHN8 | | |
| POWER SOURCE | | | 380 - 400 - 415 V / 3N / 50 Hz | | | 380 - 400 - 415 V / 3N / 50 Hz | | |
| PERFORMANCE | | | | | | | | |
| Cooling capacity | | kW (BTU / h) | 22.4 (76,400) | | | 28.0 (95,500) | | |
| Heating capacity | | kW (BTU / h) | 25.0 (85,300) | | | 31.5 (107,500) | | |
| COP | Cooling standard | – | 3.74 | | | 3.54 | | |
| | Heating standard | – | 4.05 | | | 4.06 | | |
| | Heating / Cooling ave. | – | 3.90 | | | 3.80 | | |
| UNIT DIMENSIONS | Height | mm (in.) | 1887 (74-9 / 32) | | | | | |
| | Width | mm (in.) | 890 (35-1 / 32) | | | | | |
| | Depth | mm (in.) | 890 (Ceiling dimension) (+60)<br>(35-1 / 32) (+2 - 3 / 8) | | | | | |
| Net weight | | kg (lbs.) | 245 (540) | | | 295 (650) | | |
| Color (Munsell code) | | | Silky shade (1Y 8.5 / 0.5) | | | | | |
| ELECTRICAL RATINGS | | | | | | | | |
| Voltage rating | | V | 380 | 400 | 415 | 380 | 400 | 415 |
| Cooling | Running amperes | A | 9.70 | 9.20 | 8.90 | 12.9 | 12.3 | 11.8 |
| | Power input | kW | 5.99 | 5.99 | 5.99 | 7.90 | 7.90 | 7.90 |
| | Power factor | % | 94 | 94 | 94 | 93 | 93 | 93 |
| Heating (Standard) | Running amperes | A | 10.0 | 9.50 | 9.10 | 12.7 | 12.0 | 11.6 |
| | Power input | kW | 6.17 | 6.17 | 6.17 | 7.75 | 7.75 | 7.75 |
| | Power factor | % | 94 | 94 | 94 | 93 | 93 | 93 |
| Heating (Low temp.) | Power input | kW | 5.86 | 5.86 | 5.86 | 8.63 | 8.63 | 8.63 |
| Starting amperes | | A | 1 | 1 | 1 | 66 | 67 | 71 |
| COMPRESSOR | | | | | | | | |
| Type - Q'ty | | | Hermetic type x 1 | | | Hermetic type x 2 | | |
| Motor output | | kW | 4.1 | | | 3 + 3.75 | | |
| Refrigeration oil | Type | | FV68S (Ether oil) | | | | | |
| | Charge amount | L | 3.9 | | | 4.9 | | |
| Crankcase heater | | W | 25 | | | 25 + 32 | | |
| Capacity control | | % | – | | | – | | |
| Refrigerant amount at shipment | | kg | R410A - 12.0 | | | R410A - 12.0 | | |
| Refrigerant control | | | Electronic expansion valve | | | | | |
| Defrost method | | | Reverse-cycle defrost, outdoor unit cycle defrost | | | | | |
| Heat exchanger | | | Tube with plate fins | | | | | |
| FAN DEVICE | | | | | | | | |
| Type - Q'ty | | | Propeller fan x 1 | | | Propeller fan x 1 | | |
| Air circulation | | $m^3$ / min | 150 | | | 160 | | |
| External static pressure | | Pa | 0 | | | 0 | | |
| Motor output (No. of poles) | | kW | 0.7 (8P) | | | 0.7 (8P) | | |
| Protective devices | | | High pressure switch, overcurrent (CT method) | | | | | |
| TUBING | | | | | | | | |
| Refrigerant tubing | Gas tube | mm (in.) | ø19.05 (3 / 4) (Brazing) | | | ø22.22 (7 / 8) (Brazing) | | |
| | Liquid tube | mm (in.) | ø9.52 (3 / 8) (Flare nut) | | | ø9.52 (3 / 8) (Flare nut) | | |
| | Balance tube | mm (in.) | ø6.35 (1 / 4) (Flare nut) | | | ø6.35 (1 / 4) (Flare nut) | | |
| Drain port | | | – | | | | | |
| External air temperature operation range | | °C | Cooling: -10 ~ 43 °C (DB) | | | Heating: -20 ~ 15 °C (WB) | | |
| Operation sound (Hi) | | dB-A | 54.5 (Quiet mode: 51.5) | | | 55 (Quiet mode: 52.0) | | |
| Primary accessories | | | None | | | Connection tubing (ø22.22) | | |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

* Performance, electrical characteristics values and operating sound are based on JIS B8616 package A/C.
(Cooling: Indoor intake air temp. 27°C DB / 19°C WB. Outdoor intake air temp. 35°C DB.)
(Heating [standard]: Indoor intake air temp. 20°C DB. Outdoor intake air temp. 7°C DB / 6°C WB.)
(Heating [low temp.]: Indoor intake air temp. 20°C DB / 15°C WB or less. Outdoor intake air temp. 2°C DB / 1°C WB.)

# 1. Outdoor Unit

## Unit Specifications (2)

| MODEL NAME | | | | W-2WAY ECO-i Capacity Control Outdoor Unit <12, 14, 16 horsepower> | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MODEL No. | | | | SPW-C1155DXHN8 | | | SPW-C1305DXHN8 | | | SPW-C1405DXHN8 | | |
| POWER SOURCE | | | | 380 - 400 - 415 V / 3N / 50 Hz | | | 380 - 400 - 415 V / 3N / 50 Hz | | | 380 - 400 - 415 V / 3N / 50 Hz | | |
| PERFORMANCE | | | | | | | | | | | | |
| Cooling capacity | | | kW (BTU / h) | 33.5 (114,300) | | | 40.0 (136,500) | | | 45.0 (153,600) | | |
| Heating capacity | | | kW (BTU / h) | 37.5 (128,000) | | | 45.0 (153,600) | | | 50.0 (170,600) | | |
| COP | | Cooling standard | – | 3.50 | | | 3.45 | | | 3.38 | | |
| | | Heating standard | – | 3.91 | | | 3.91 | | | 3.79 | | |
| | | Heating / Cooling ave. | – | 3.71 | | | 3.68 | | | 3.59 | | |
| UNIT DIMENSIONS | | Height | mm (in.) | 1887 (74-9 / 32) | | | | | | | | |
| | | Width | mm (in.) | 890 (35-1 / 32) | | | | | | | | |
| | | Depth | mm (in.) | 890 (Ceiling dimension) (+60)<br>(35-1 / 32) (+2 - 3 / 8) | | | | | | | | |
| Net weight | | | kg (lbs.) | 295 (650) | | | 345 (760) | | | 345 (760) | | |
| Color (Munsell code) | | | | Silky shade (1Y 8.5 / 0.5) | | | | | | | | |
| ELECTRICAL RATINGS | | | | | | | | | | | | |
| Voltage rating | | | V | 380 | 400 | 415 | 380 | 400 | 415 | 380 | 400 | 415 |
| Cooling | | Running amperes | A | 15.6 | 14.9 | 14.3 | 19.6 | 18.6 | 17.9 | 22.5 | 21.3 | 20.6 |
| | | Power input | kW | 9.58 | 9.58 | 9.58 | 11.6 | 11.6 | 11.6 | 13.3 | 13.3 | 13.3 |
| | | Power factor | % | 93 | 93 | 93 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heating | Standard | Running amperes | A | 15.7 | 14.9 | 14.3 | 19.4 | 18.5 | 17.8 | 22.3 | 21.2 | 20.4 |
| | | Power input | kW | 9.60 | 9.60 | 9.60 | 11.5 | 11.5 | 11.5 | 13.2 | 13.2 | 13.2 |
| | | Power factor | % | 93 | 93 | 93 | 90 | 90 | 90 | 90 | 90 | 90 |
| | Low temp. | Power input | kW | 10.4 | 10.4 | 10.4 | 12.7 | 12.7 | 12.7 | 14.6 | 14.6 | 14.6 |
| Starting amperes | | | A | 69 | 71 | 74 | 78 | 79 | 83 | 83 | 85 | 89 |
| COMPRESSOR | | | | | | | | | | | | |
| Type - Q'ty | | | | Hermetic type x 2 | | | Hermetic type x 3 | | | Hermetic type x 3 | | |
| Motor output | | | kW | 4.5 + 4.5 | | | 3 + 3.75 x 2 | | | 3 + 4.5 x 2 | | |
| Refrigeration oil | | Type | | FV68S (Ether oil) | | | | | | | | |
| | | Charge amount | L | 4.9 | | | 5.9 | | | 5.9 | | |
| Crankcase heater | | | W | 25 + 32 | | | 25 + 32 x 2 | | | 25 + 32 x 2 | | |
| Capacity control | | | % | – | | | | | | | | |
| Refrigerant amount at shipment | | | kg | R410A - 12.0 | | | R410A - 13.0 | | | R410A - 13.0 | | |
| Refrigerant control | | | | Electronic expansion valve | | | | | | | | |
| Defrost method | | | | Reverse-cycle defrost, outdoor unit cycle defrost | | | | | | | | |
| Heat exchanger | | | | Tube with plate fins | | | | | | | | |
| FAN DEVICE | | | | | | | | | | | | |
| Type - Q'ty | | | | Propeller fan x 1 | | | Propeller fan x 1 | | | Propeller fan x 1 | | |
| Air circulation | | | $m^3$ / min | 180 | | | 200 | | | 220 | | |
| External static pressure | | | Pa | 0 | | | 0 | | | 0 | | |
| Motor output (No. of poles) | | | kW | 0.7 (8P) | | | 0.7 (8P) | | | 0.7 (8P) | | |
| Protective devices | | | | High pressure switch, overcurrent (CT method) | | | | | | | | |
| TUBING | | | | | | | | | | | | |
| Refrigerant tubing | | Gas tube | mm (in.) | ø25.4 (1) (Brazing) | | | ø25.4 (1) (Brazing) | | | ø28.58 (1-1 / 8) (Brazing) | | |
| | | Liquid tube | mm (in.) | ø12.7 (1 / 2) (Flare nut) | | | ø12.7 (1 / 2) (Flare nut) | | | ø12.7 (1 / 2) (Flare nut) | | |
| | | Balance tube | mm (in.) | ø6.35 (1 / 4) (Flare nut) | | | ø6.35 (1 / 4) (Flare nut) | | | ø6.35 (1 / 4) (Flare nut) | | |
| Drain port | | | | – | | | | | | | | |
| External air temperature operation range | | | °C | Cooling: -10 ~ 43 °C (DB) Heating: -20 ~ 15 °C (WB) | | | | | | | | |
| Operation sound (Hi) | | | dB-A | 56.0 (Quiet mode: 53.0) | | | 61.0 (Quiet mode: 58.0) | | | 62.0 (Quiet mode: 59.0) | | |
| Primary accessories | | | | Connection tubing (ø25.4) | | | None | | | Connection tubing (ø28.58) | | |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

* Performance, electrical characteristics values and operating sound are based on JIS B8616 package A/C.
(Cooling: Indoor intake air temp. 27°C DB / 19°C WB. Outdoor intake air temp. 35°C DB.)
(Heating [standard]: Indoor intake air temp. 20°C DB. Outdoor intake air temp. 7°C DB / 6°C WB.)
(Heating [low temp.]: Indoor intake air temp. 20°C DB / 15°C WB or less. Outdoor intake air temp. 2°C DB / 1°C WB.)

# 1. Outdoor Unit

**Unit Specifications (3)**

| MODEL NAME | | | | W-2WAY ECO-i Capacity Control Outdoor Unit <18 horsepower> | | |
|---|---|---|---|---|---|---|
| GENERAL MODEL No. | | | | SPW-WC1805DXHN8 | | |
| COMPONENT OUTDOOR UNIT | | | | SPW-C0905DXHN8 | SPW-C0705DXHN8 | |
| POWER SOURCE | | | | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz | |
| PERFORMANCE | | | | | | |
| Cooling capacity | | | kW (BTU / h) | 50.4 (172,000) | | |
| Heating capacity | | | kW (BTU / h) | 56.5 (192,800) | | |
| COP | | Cooling standard | – | 3.63 | | |
| | | Heating standard | – | 4.06 | | |
| | | Heating / Cooling ave. | – | 3.85 | | |
| UNIT DIMENSIONS | | Height | mm (in.) | 1887 (74-9 / 32) | | |
| | | Width | mm (in.) | 1880 (74) | | |
| | | Depth | mm (in.) | 890 (Ceiling dimension) (+60)<br>(35-1 / 32) (+2 - 3 / 8) | | |
| Net weight | | | kg (lbs.) | 295 (650) | 245 (540) | |
| Color (Munsell code) | | | | Silky shade (1Y 8.5 / 0.5) | | |
| ELECTRICAL RATINGS | | | | | | |
| Voltage rating | | | V | 380 | 400 | 415 |
| Cooling | | Running amperes | A | 22.7 | 21.6 | 20.8 |
| | | Power input | kW | 13.9 | 13.9 | 13.9 |
| | | Power factor | % | 93 | 93 | 93 |
| Heating | Standard | Running amperes | A | 22.7 | 21.6 | 20.8 |
| | | Power input | kW | 13.9 | 13.9 | 13.9 |
| | | Power factor | % | 93 | 93 | 93 |
| | Low temp. | Power input | kW | 14.5 | 14.5 | 14.5 |
| Starting amperes | | | A | 76 | 77 | 80 |
| COMPRESSOR | | | | | | |
| Type - Q'ty | | | | Hermetic type x 2 | Hermetic type x 1 | |
| Motor output | | | kW | 4.1 | 3 + 3.75 | |
| Refrigeration oil | | Type | | FV68S (Ether oil) | | |
| | | Charge amount | L | 4.9 | 3.9 | |
| Crankcase heater | | | W | 25 + 32 | 25 | |
| Capacity control | | | % | – | | |
| Refrigerant amount at shipment | | | kg | R410A - 12.0 | R410A - 12.0 | |
| Refrigerant control | | | | Electronic expansion valve | | |
| Defrost method | | | | Reverse-cycle defrost, outdoor unit cycle defrost | | |
| Heat exchanger | | | | Tube with plate fins | | |
| FAN DEVICE | | | | | | |
| Type - Q'ty | | | | Propeller fan x 1 | Propeller fan x 1 | |
| Air circulation | | | $m^3$ / min | 160 | 150 | |
| External static pressure | | | Pa | 0 | 0 | |
| Motor output (No. of poles) | | | kW | 0.7 (8P) | 0.7 (8P) | |
| Protective devices | | | | High pressure switch, overcurrent (CT method) | | |
| TUBING | | | | | | |
| Refrigerant tubing | | Gas tube | mm (in.) | ø22.22 (7 / 8) (Brazing) | ø19.05 (3 / 4) (Brazing) | |
| | | Liquid tube | mm (in.) | ø9.52 (3 / 8) (Flare nut) | | |
| | | Balance tube | mm (in.) | ø6.35 (1 / 4) (Flare nut) | | |
| Drain port | | | | – | | |
| External air temperature operation range | | | °C | Cooling: -10 ~ 43 °C (DB) | Heating: -20 ~ 15 °C (WB) | |
| Operation sound (Hi) | | | dB-A | 58.0 (Quiet mode: 55.0) | | |
| Primary accessories | | | | Connection tubing (ø22.22) | None | |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

* Performance, electrical characteristics values and operating sound are based on JIS B8616 package A/C.
(Cooling: Indoor intake air temp. 27°C DB / 19°C WB. Outdoor intake air temp. 35°C DB.)
(Heating [standard]: Indoor intake air temp. 20°C DB. Outdoor intake air temp. 7°C DB / 6°C WB.)
(Heating [low temp.]: Indoor intake air temp. 20°C DB / 15°C WB or less. Outdoor intake air temp. 2°C DB / 1°C WB.)

# 1. Outdoor Unit

**Unit Specifications (4)**

| MODEL NAME | | | W-2WAY ECO-i Capacity Control Outdoor Unit <20 horsepower> | | | |
|---|---|---|---|---|---|---|
| GENERAL MODEL No. | | | SPW-WC2005DXHN8 | | | |
| COMPONENT OUTDOOR UNIT | | | SPW-C0905DXHN8 | SPW-C0905DXHN8 | | |
| POWER SOURCE | | | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz | | |
| PERFORMANCE | | | | | | |
| Cooling capacity | | kW (BTU / h) | 56.0 (191,100) | | | |
| Heating capacity | | kW (BTU / h) | 63.0 (215,000) | | | |
| COP | Cooling standard | – | 3.54 | | | |
| | Heating standard | – | 4.06 | | | |
| | Heating / Cooling ave. | – | 3.80 | | | |
| UNIT DIMENSIONS | Height | mm (in.) | 1887 (74-9 / 32) | | | |
| | Width | mm (in.) | 1880 (74) | | | |
| | Depth | mm (in.) | 890 (Ceiling dimension) (+60)<br>(35-1 / 32) (+2 - 3 / 8) | | | |
| Net weight | | kg (lbs.) | 295 (650) | 295 (650) | | |
| Color (Munsell code) | | | Silky shade (1Y 8.5 / 0.5) | | | |
| ELECTRICAL RATINGS | | | | | | |
| Voltage rating | | V | 380 | 400 | 415 | |
| Cooling | Running amperes | A | 26.0 | 24.7 | 23.8 | |
| | Power input | kW | 15.8 | 15.8 | 15.8 | |
| | Power factor | % | 93 | 93 | 93 | |
| Heating Standard | Running amperes | A | 25.5 | 24.2 | 23.3 | |
| | Power input | kW | 15.5 | 15.5 | 15.5 | |
| | Power factor | % | 93 | 93 | 93 | |
| Heating Low temp. | Power input | kW | 17.3 | 17.3 | 17.3 | |
| Starting amperes | | A | 79 | 79 | 83 | |
| COMPRESSOR | | | | | | |
| Type - Q'ty | | | Hermetic type x 2 | Hermetic type x 2 | | |
| Motor output | | kW | 3 + 3.75 | 3 + 3.75 | | |
| Refrigeration oil | Type | | FV68S (Ether oil) | | | |
| | Charge amount | L | 4.9 | 4.9 | | |
| Crankcase heater | | W | 25 + 32 | 25 + 32 | | |
| Capacity control | | % | – | | | |
| Refrigerant amount at shipment | | kg | R410A - 12.0 | R410A - 12.0 | | |
| Refrigerant control | | | Electronic expansion valve | | | |
| Defrost method | | | Reverse-cycle defrost, outdoor unit cycle defrost | | | |
| Heat exchanger | | | Tube with plate fins | | | |
| FAN DEVICE | | | | | | |
| Type - Q'ty | | | Propeller fan x 1 | Propeller fan x 1 | | |
| Air circulation | | $m^3$ / min | 160 | 160 | | |
| External static pressure | | Pa | 0 | 0 | | |
| Motor output (No. of poles) | | kW | 0.7 (8P) | 0.7 (8P) | | |
| Protective devices | | | High pressure switch, overcurrent (CT method) | | | |
| TUBING | | | | | | |
| Refrigerant tubing | Gas tube | mm (in.) | ø22.22 (7 / 8) (Brazing) | | | |
| | Liquid tube | mm (in.) | ø9.52 (3 / 8) (Flare nut) | | | |
| | Balance tube | mm (in.) | ø6.35 (1 / 4) (Flare nut) | | | |
| Drain port | | | – | | | |
| External air temperature operation range | | °C | Cooling: -10 ~ 43 °C (DB) | Heating: -20 ~ 15 °C (WB) | | |
| Operation sound (Hi) | | dB-A | 58.0 (Quiet mode: 55.0) | | | |
| Primary accessories | | | Connection tubing (ø22.22) | Connection tubing (ø22.22) | | |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

* Performance, electrical characteristics values and operating sound are based on JIS B8616 package A/C.
(Cooling: Indoor intake air temp. 27°C DB / 19°C WB. Outdoor intake air temp. 35°C DB.)
(Heating [standard]: Indoor intake air temp. 20°C DB. Outdoor intake air temp. 7°C DB / 6°C WB.)
(Heating [low temp.]: Indoor intake air temp. 20°C DB / 15°C WB or less. Outdoor intake air temp. 2°C DB / 1°C WB.)

# 1. Outdoor Unit

**Unit Specifications (5)**

| MODEL NAME | | | W-2WAY ECO-i Capacity Control Outdoor Unit <22 horsepower> | | | |
|---|---|---|---|---|---|---|
| GENERAL MODEL No. | | | SPW-WC2205DXHN8 | | | |
| COMPONENT OUTDOOR UNIT | | | SPW-C1155DXHN8 | | SPW-C0905DXHN8 | |
| POWER SOURCE | | | 380 - 400 - 415 V / 3N / 50 Hz | | 380 - 400 - 415 V / 3N / 50 Hz | |
| PERFORMANCE | | | | | | |
| Cooling capacity | | kW (BTU / h) | 61.5 (209,900) | | | |
| Heating capacity | | kW (BTU / h) | 69.0 (235,500) | | | |
| COP | Cooling standard | – | 3.51 | | | |
| | Heating standard | – | 3.97 | | | |
| | Heating / Cooling ave. | – | 3.74 | | | |
| UNIT DIMENSIONS | Height | mm (in.) | 1887 (74-9 / 32) | | | |
| | Width | mm (in.) | 1880 (74) | | | |
| | Depth | mm (in.) | 890 (Ceiling dimension) (+60)<br>(35-1 / 32) (+2 - 3 / 8) | | | |
| Net weight | | kg (lbs.) | 295 (650) | | 295 (650) | |
| Color (Munsell code) | | | Silky shade (1Y 8.5 / 0.5) | | | |
| ELECTRICAL RATINGS | | | | | | |
| Voltage rating | | V | 380 | | 400 | 415 |
| Cooling | Running amperes | A | 28.6 | | 27.2 | 26.2 |
| | Power input | kW | 17.5 | | 17.5 | 17.5 |
| | Power factor | % | 93 | | 93 | 93 |
| Heating Standard | Running amperes | A | 28.4 | | 27.0 | 26.0 |
| | Power input | kW | 17.4 | | 17.4 | 17.4 |
| | Power factor | % | 93 | | 93 | 93 |
| Heating Low temp. | Power input | kW | 19.0 | | 19.0 | 19.0 |
| Starting amperes | | A | 81 | | 84 | 86 |
| COMPRESSOR | | | | | | |
| Type - Q'ty | | | Hermetic type x 2 | | Hermetic type x 2 | |
| Motor output | | kW | 4.5 + 4.5 | | 3 + 3.75 | |
| Refrigeration oil | Type | | FV68S (Ether oil) | | | |
| | Charge amount | L | 4.9 | | 4.9 | |
| Crankcase heater | | W | 25 + 32 | | 25 + 32 | |
| Capacity control | | % | – | | | |
| Refrigerant amount at shipment | | kg | R410A - 12.0 | | R410A - 12.0 | |
| Refrigerant control | | | Electronic expansion valve | | | |
| Defrost method | | | Reverse-cycle defrost, outdoor unit cycle defrost | | | |
| Heat exchanger | | | Tube with plate fins | | | |
| FAN DEVICE | | | | | | |
| Type - Q'ty | | | Propeller fan x 1 | | Propeller fan x 1 | |
| Air circulation | | $m^3$ / min | 180 | | 160 | |
| External static pressure | | Pa | 0 | | 0 | |
| Motor output (No. of poles) | | kW | 0.7 (8P) | | 0.7 (8P) | |
| Protective devices | | | High pressure switch, overcurrent (CT method) | | | |
| TUBING | | | | | | |
| Refrigerant tubing | Gas tube | mm (in.) | ø25.4 (1) (Brazing) | | ø22.22 (7 / 8) (Brazing) | |
| | Liquid tube | mm (in.) | ø12.7 (1 / 2) (Flare nut) | | | |
| | Balance tube | mm (in.) | ø6.35 (1 / 4) (Flare nut) | | | |
| Drain port | | | – | | | |
| External air temperature operation range | | °C | Cooling: -10 ~ 43 °C (DB) | | Heating: -20 ~ 15 °C (WB) | |
| Operation sound (Hi) | | dB-A | 58.5 (Quiet mode: 55.5) | | | |
| Primary accessories | | | Connection tubing (ø25.4) | | Connection tubing (ø22.22) | |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

* Performance, electrical characteristics values and operating sound are based on JIS B8616 package A/C.
(Cooling: Indoor intake air temp. 27°C DB / 19°C WB. Outdoor intake air temp. 35°C DB.)
(Heating [standard]: Indoor intake air temp. 20°C DB. Outdoor intake air temp. 7°C DB / 6°C WB.)
(Heating [low temp.]: Indoor intake air temp. 20°C DB / 15°C WB or less. Outdoor intake air temp. 2°C DB / 1°C WB.)

# 1. Outdoor Unit

**Unit Specifications (6)**

| MODEL NAME | | | | W-2WAY ECO-i Capacity Control Outdoor Unit <24 horsepower> | | |
|---|---|---|---|---|---|---|
| GENERAL MODEL No. | | | | SPW-WC2405DXHN8 | | |
| COMPONENT OUTDOOR UNIT | | | | SPW-C1305DXHN8 | SPW-C0905DXHN8 | |
| POWER SOURCE | | | | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz | |
| PERFORMANCE | | | | | | |
| Cooling capacity | | | kW (BTU / h) | 68.0 (232,000) | | |
| Heating capacity | | | kW (BTU / h) | 76.5 (261,000) | | |
| COP | | Cooling standard | – | 3.49 | | |
| | | Heating standard | – | 3.96 | | |
| | | Heating / Cooling ave. | – | 3.73 | | |
| UNIT DIMENSIONS | | Height | mm (in.) | 1887 (74-9 / 32) | | |
| | | Width | mm (in.) | 1880 (74) | | |
| | | Depth | mm (in.) | 890 (Ceiling dimension) (+60)<br>(35-1 / 32) (+2 - 3 / 8) | | |
| Net weight | | | kg (lbs.) | 345 (760) | 295 (650) | |
| Color (Munsell code) | | | | Silky shade (1Y 8.5 / 0.5) | | |
| ELECTRICAL RATINGS | | | | | | |
| Voltage rating | | | V | 380 | 400 | 415 |
| Cooling | | Running amperes | A | 32.4 | 30.8 | 29.6 |
| | | Power input | kW | 19.5 | 19.5 | 19.5 |
| | | Power factor | % | 92 | 92 | 92 |
| Heating | Standard | Running amperes | A | 32.0 | 30.4 | 29.3 |
| | | Power input | kW | 19.3 | 19.3 | 19.3 |
| | | Power factor | % | 92 | 92 | 92 |
| | Low temp. | Power input | kW | 21.3 | 21.3 | 21.3 |
| Starting amperes | | | A | 90 | 92 | 94 |
| COMPRESSOR | | | | | | |
| Type - Q'ty | | | | Hermetic type x 3 | Hermetic type x 2 | |
| Motor output | | | kW | 3 + 3.75 x 2 | 3 + 3.75 | |
| Refrigeration oil | | Type | | FV68S (Ether oil) | | |
| | | Charge amount | L | 5.9 | 4.9 | |
| Crankcase heater | | | W | 25 + 32 x 2 | 25 + 32 | |
| Capacity control | | | % | – | | |
| Refrigerant amount at shipment | | | kg | R410A - 13.0 | R410A - 12.0 | |
| Refrigerant control | | | | Electronic expansion valve | | |
| Defrost method | | | | Reverse-cycle defrost, outdoor unit cycle defrost | | |
| Heat exchanger | | | | Tube with plate fins | | |
| FAN DEVICE | | | | | | |
| Type - Q'ty | | | | Propeller fan x 1 | Propeller fan x 1 | |
| Air circulation | | | $m^3$ / min | 200 | 160 | |
| External static pressure | | | Pa | 0 | 0 | |
| Motor output (No. of poles) | | | kW | 0.7 (8P) | 0.7 (8P) | |
| Protective devices | | | | High pressure switch, overcurrent (CT method) | | |
| TUBING | | | | | | |
| Refrigerant tubing | | Gas tube | mm (in.) | ø25.4 (1) (Brazing) | ø22.22 (7 / 8) (Brazing) | |
| | | Liquid tube | mm (in.) | ø12.7 (1 / 2) (Flare nut) | ø9.52 (3 / 8) (Flare nut) | |
| | | Balance tube | mm (in.) | ø6.35 (1 / 4) (Flare nut) | | |
| Drain port | | | | – | | |
| External air temperature operation range | | | °C | Cooling: -10 ~ 43 °C (DB) | Heating: -20 ~ 15 °C (WB) | |
| Operation sound (Hi) | | | dB-A | 62.0 (Quiet mode: 59.0) | | |
| Primary accessories | | | | None | Connection tubing (ø22.22) | |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

* Performance, electrical characteristics values and operating sound are based on JIS B8616 package A/C.
(Cooling: Indoor intake air temp. 27°C DB / 19°C WB. Outdoor intake air temp. 35°C DB.)
(Heating [standard]: Indoor intake air temp. 20°C DB. Outdoor intake air temp. 7°C DB / 6°C WB.)
(Heating [low temp.]: Indoor intake air temp. 20°C DB / 15°C WB or less. Outdoor intake air temp. 2°C DB / 1°C WB.)

# 1. Outdoor Unit

**Unit Specifications (7)**

| MODEL NAME | | | W-2WAY ECO-i Capacity Control Outdoor Unit <26 horsepower> | | | |
|---|---|---|---|---|---|---|
| GENERAL MODEL No. | | | | SPW-WC2605DXHN8 | | |
| COMPONENT OUTDOOR UNIT | | | | SPW-C1405DXHN8 | SPW-C0905DXHN8 | |
| POWER SOURCE | | | | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz | |
| PERFORMANCE | | | | | | |
| Cooling capacity | | | kW (BTU / h) | 73.0 (249,100) | | |
| Heating capacity | | | kW (BTU / h) | 81.5 (278,100) | | |
| COP | | Cooling standard | – | 3.44 | | |
| | | Heating standard | – | 3.88 | | |
| | | Heating / Cooling ave. | – | 3.66 | | |
| UNIT DIMENSIONS | | Height | mm (in.) | 1887 (74-9 / 32) | | |
| | | Width | mm (in.) | 1880 (74) | | |
| | | Depth | mm (in.) | 890 (Ceiling dimension) (+60)<br>(35-1 / 32) (+2 - 3 / 8) | | |
| Net weight | | | kg (lbs.) | 345 (760) | 295 (650) | |
| Color (Munsell code) | | | | Silky shade (1Y 8.5 / 0.5) | | |
| ELECTRICAL RATINGS | | | | | | |
| Voltage rating | | | V | 380 | 400 | 415 |
| Cooling | | Running amperes | A | 35.4 | 33.6 | 32.4 |
| | | Power input | kW | 21.2 | 21.2 | 21.2 |
| | | Power factor | % | 91 | 91 | 91 |
| Heating | Standard | Running amperes | A | 35.1 | 33.3 | 32.1 |
| | | Power input | kW | 21.0 | 21.0 | 21.0 |
| | | Power factor | % | 91 | 91 | 91 |
| | Low temp. | Power input | kW | 23.2 | 23.2 | 23.2 |
| Starting amperes | | | A | 96 | 98 | 100 |
| COMPRESSOR | | | | | | |
| Type - Q'ty | | | | Hermetic type x 3 | Hermetic type x 2 | |
| Motor output | | | kW | 3 + 4.5 x 2 | 3 + 3.75 | |
| Refrigeration oil | | Type | | FV68S (Ether oil) | | |
| | | Charge amount | L | 5.9 | 4.9 | |
| Crankcase heater | | | W | 25 + 32 x 2 | 25 + 32 | |
| Capacity control | | | % | – | | |
| Refrigerant amount at shipment | | | kg | R410A - 13.0 | R410A - 12.0 | |
| Refrigerant control | | | | Electronic expansion valve | | |
| Defrost method | | | | Reverse-cycle defrost, outdoor unit cycle defrost | | |
| Heat exchanger | | | | Tube with plate fins | | |
| FAN DEVICE | | | | | | |
| Type - Q'ty | | | | Propeller fan x 1 | Propeller fan x 1 | |
| Air circulation | | | $m^3$ / min | 220 | 160 | |
| External static pressure | | | Pa | 0 | 0 | |
| Motor output (No. of poles) | | | kW | 0.7 (8P) | 0.7 (8P) | |
| Protective devices | | | | High pressure switch, overcurrent (CT method) | | |
| TUBING | | | | | | |
| Refrigerant tubing | | Gas tube | mm (in.) | ø28.58 (1-1 / 8) (Brazing) | ø22.22 (7 / 8) (Brazing) | |
| | | Liquid tube | mm (in.) | ø12.7 (1 / 2) (Flare nut) | ø9.52 (3 / 8) (Flare nut) | |
| | | Balance tube | mm (in.) | ø6.35 (1 / 4) (Flare nut) | | |
| Drain port | | | | – | | |
| External air temperature operation range | | | °C | Cooling: -10 ~ 43 °C (DB) | Heating: -20 ~ 15 °C (WB) | |
| Operation sound (Hi) | | | dB-A | 63.0 (Quiet mode: 60.0) | | |
| Primary accessories | | | | Connection tubing (ø28.58) | Connection tubing (ø22.22) | |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

* Performance, electrical characteristics values and operating sound are based on JIS B8616 package A/C.
(Cooling: Indoor intake air temp. 27°C DB / 19°C WB. Outdoor intake air temp. 35°C DB.)
(Heating [standard]: Indoor intake air temp. 20°C DB. Outdoor intake air temp. 7°C DB / 6°C WB.)
(Heating [low temp.]: Indoor intake air temp. 20°C DB / 15°C WB or less. Outdoor intake air temp. 2°C DB / 1°C WB.)

# 1. Outdoor Unit

**Unit Specifications (8)**

| MODEL NAME | | | W-2WAY ECO-i Capacity Control Outdoor Unit <28 horsepower> | | | |
|---|---|---|---|---|---|---|
| GENERAL MODEL No. | | | SPW-WC2805DXHN8 | | | |
| COMPONENT OUTDOOR UNIT | | | SPW-C1405DXHN8 | | SPW-C1155DXHN8 | |
| POWER SOURCE | | | 380 - 400 - 415 V / 3N / 50 Hz | | 380 - 400 - 415 V / 3N / 50 Hz | |
| PERFORMANCE | | | | | | |
| Cooling capacity | | kW (BTU / h) | 78.5 (267,900) | | | |
| Heating capacity | | kW (BTU / h) | 87.5 (298,600) | | | |
| COP | Cooling standard | – | 3.43 | | | |
| | Heating standard | – | 3.84 | | | |
| | Heating / Cooling ave. | – | 3.64 | | | |
| UNIT DIMENSIONS | Height | mm (in.) | 1887 (74-9 / 32) | | | |
| | Width | mm (in.) | 1880 (74) | | | |
| | Depth | mm (in.) | 890 (Ceiling dimension) (+60)<br>(35-1 / 32) (+2 - 3 / 8) | | | |
| Net weight | | kg (lbs.) | 345 (760) | | 295 (650) | |
| Color (Munsell code) | | | Silky shade (1Y 8.5 / 0.5) | | | |
| ELECTRICAL RATINGS | | | | | | |
| Voltage rating | | V | 380 | 400 | 415 | |
| Cooling | Running amperes | A | 38.2 | 36.3 | 35.0 | |
| | Power input | kW | 22.9 | 22.9 | 22.9 | |
| | Power factor | % | 91 | 91 | 91 | |
| Heating Standard | Running amperes | A | 38.1 | 36.2 | 34.9 | |
| | Power input | kW | 22.8 | 22.8 | 22.8 | |
| | Power factor | % | 91 | 91 | 91 | |
| Heating Low temp. | Power input | kW | 25.0 | 25.0 | 25.0 | |
| Starting amperes | | A | 99 | 100 | 103 | |
| COMPRESSOR | | | | | | |
| Type - Q'ty | | | Hermetic type x 3 | | Hermetic type x 2 | |
| Motor output | | kW | 3 + 4.5 x 2 | | 4.5 + 4.5 | |
| Refrigeration oil | Type | | FV68S (Ether oil) | | | |
| | Charge amount | L | 5.9 | | 4.9 | |
| Crankcase heater | | W | 25 + 32 x 2 | | 25 + 32 | |
| Capacity control | | % | – | | | |
| Refrigerant amount at shipment | | kg | R410A - 13.0 | | R410A - 12.0 | |
| Refrigerant control | | | Electronic expansion valve | | | |
| Defrost method | | | Reverse-cycle defrost, outdoor unit cycle defrost | | | |
| Heat exchanger | | | Tube with plate fins | | | |
| FAN DEVICE | | | | | | |
| Type - Q'ty | | | Propeller fan x 1 | | Propeller fan x 1 | |
| Air circulation | | $m^3$ / min | 220 | | 180 | |
| External static pressure | | Pa | 0 | | 0 | |
| Motor output (No. of poles) | | kW | 0.7 (8P) | | 0.7 (8P) | |
| Protective devices | | | High pressure switch, overcurrent (CT method) | | | |
| TUBING | | | | | | |
| Refrigerant tubing | Gas tube | mm (in.) | ø28.58 (1-1 / 8) (Brazing) | | ø25.4 (1) (Brazing) | |
| | Liquid tube | mm (in.) | ø12.7 (1 / 2) (Flare nut) | | | |
| | Balance tube | mm (in.) | ø6.35 (1 / 4) (Flare nut) | | | |
| Drain port | | | – | | | |
| External air temperature operation range | | °C | Cooling: -10 ~ 43 °C (DB) | | Heating: -20 ~ 15 °C (WB) | |
| Operation sound (Hi) | | dB-A | 63.0 (Quiet mode: 60.0) | | | |
| Primary accessories | | | Connection tubing (ø28.58) | | Connection tubing (ø25.4) | |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

* Performance, electrical characteristics values and operating sound are based on JIS B8616 package A/C.
(Cooling: Indoor intake air temp. 27°C DB / 19°C WB. Outdoor intake air temp. 35°C DB.)
(Heating [standard]: Indoor intake air temp. 20°C DB. Outdoor intake air temp. 7°C DB / 6°C WB.)
(Heating [low temp.]: Indoor intake air temp. 20°C DB / 15°C WB or less. Outdoor intake air temp. 2°C DB / 1°C WB.)

# 1. Outdoor Unit

**Unit Specifications (9)**

| MODEL NAME | | | W-2WAY ECO-i Capacity Control Outdoor Unit <30 horsepower> | | | |
|---|---|---|---|---|---|---|
| GENERAL MODEL No. | | | SPW-WC3005DXHN8 | | | |
| COMPONENT OUTDOOR UNIT | | | SPW-C1405DXHN8 | SPW-C1305DXHN8 | | |
| POWER SOURCE | | | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz | | |
| PERFORMANCE | | | | | | |
| Cooling capacity | | kW (BTU / h) | 85.0 (290,000) | | | |
| Heating capacity | | kW (BTU / h) | 95.0 (324,200) | | | |
| COP | Cooling standard | – | 3.41 | | | |
| | Heating standard | – | 3.85 | | | |
| | Heating / Cooling ave. | – | 3.63 | | | |
| UNIT DIMENSIONS | Height | mm (in.) | 1887 (74-9 / 32) | | | |
| | Width | mm (in.) | 1880 (74) | | | |
| | Depth | mm (in.) | 890 (Ceiling dimension) (+60)<br>(35-1 / 32) (+2 - 3 / 8) | | | |
| Net weight | | kg (lbs.) | 345 (760) | 345 (760) | | |
| Color (Munsell code) | | | Silky shade (1Y 8.5 / 0.5) | | | |
| ELECTRICAL RATINGS | | | | | | |
| Voltage rating | | V | 380 | 400 | 415 | |
| Cooling | Running amperes | A | 42.0 | 39.9 | 38.5 | |
| | Power input | kW | 24.9 | 24.9 | 24.9 | |
| | Power factor | % | 90 | 90 | 90 | |
| Heating Standard | Running amperes | A | 41.7 | 39.6 | 38.2 | |
| | Power input | kW | 24.7 | 24.7 | 24.7 | |
| | Power factor | % | 90 | 90 | 90 | |
| Heating Low temp. | Power input | kW | 27.3 | 27.3 | 27.3 | |
| Starting amperes | | A | 103 | 104 | 107 | |
| COMPRESSOR | | | | | | |
| Type - Q'ty | | | Hermetic type x 3 | Hermetic type x 3 | | |
| Motor output | | kW | 3 + 4.5 x 2 | 3 + 3.75 x 2 | | |
| Refrigeration oil | Type | | FV68S (Ether oil) | | | |
| | Charge amount | L | 5.9 | 5.9 | | |
| Crankcase heater | | W | 25 + 32 x 2 | 25 + 32 x 2 | | |
| Capacity control | | % | – | | | |
| Refrigerant amount at shipment | | kg | R410A - 13.0 | R410A - 13.0 | | |
| Refrigerant control | | | Electronic expansion valve | | | |
| Defrost method | | | Reverse-cycle defrost, outdoor unit cycle defrost | | | |
| Heat exchanger | | | Tube with plate fins | | | |
| FAN DEVICE | | | | | | |
| Type - Q'ty | | | Propeller fan x 1 | Propeller fan x 1 | | |
| Air circulation | | $m^3$ / min | 220 | 200 | | |
| External static pressure | | Pa | 0 | 0 | | |
| Motor output (No. of poles) | | kW | 0.7 (8P) | 0.7 (8P) | | |
| Protective devices | | | High pressure switch, overcurrent (CT method) | | | |
| TUBING | | | | | | |
| Refrigerant tubing | Gas tube | mm (in.) | ø28.58 (1-1 / 8) (Brazing) | ø25.4 (1) (Brazing) | | |
| | Liquid tube | mm (in.) | ø12.7 (1 / 2) (Flare nut) | | | |
| | Balance tube | mm (in.) | ø6.35 (1 / 4) (Flare nut) | | | |
| Drain port | | | – | | | |
| External air temperature operation range | | °C | Cooling: -10 ~ 43 °C (DB) | Heating: -20 ~ 15 °C (WB) | | |
| Operation sound (Hi) | | dB-A | 64.5 (Quiet mode: 61.5) | | | |
| Primary accessories | | | Connection tubing (ø28.58) | None | | |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

* Performance, electrical characteristics values and operating sound are based on JIS B8616 package A/C.
(Cooling: Indoor intake air temp. 27°C DB / 19°C WB. Outdoor intake air temp. 35°C DB.)
(Heating [standard]: Indoor intake air temp. 20°C DB. Outdoor intake air temp. 7°C DB / 6°C WB.)
(Heating [low temp.]: Indoor intake air temp. 20°C DB / 15°C WB or less. Outdoor intake air temp. 2°C DB / 1°C WB.)

# 1. Outdoor Unit

**Unit Specifications (10)**

| MODEL NAME | | | W-2WAY ECO-i Capacity Control Outdoor Unit <32 horsepower> | | |
|---|---|---|---|---|---|
| GENERAL MODEL No. | | | SPW-WC3205DXHN8 | | |
| COMPONENT OUTDOOR UNIT | | | SPW-C1405DXHN8 | SPW-C1405DXHN8 | |
| POWER SOURCE | | | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz | |
| PERFORMANCE | | | | | |
| Cooling capacity | | kW (BTU / h) | 90.0 (307,100) | | |
| Heating capacity | | kW (BTU / h) | 100.0 (341,200) | | |
| COP | Cooling standard | – | 3.38 | | |
| | Heating standard | – | 3.79 | | |
| | Heating / Cooling ave. | – | 3.59 | | |
| UNIT DIMENSIONS | Height | mm (in.) | 1887 (74-9 / 32) | | |
| | Width | mm (in.) | 1880 (74) | | |
| | Depth | mm (in.) | 890 (Ceiling dimension) (+60)<br>(35-1 / 32) (+2 - 3 / 8) | | |
| Net weight | | kg (lbs.) | 345 (760) | 345 (760) | |
| Color (Munsell code) | | | Silky shade (1Y 8.5 / 0.5) | | |
| ELECTRICAL RATINGS | | | | | |
| Voltage rating | | V | 380 | 400 | 415 |
| Cooling | Running amperes | A | 44.9 | 42.7 | 41.1 |
| | Power input | kW | 26.6 | 26.6 | 26.6 |
| | Power factor | % | 90 | 90 | 90 |
| Heating Standard | Running amperes | A | 44.6 | 42.3 | 40.8 |
| | Power input | kW | 26.4 | 26.4 | 26.4 |
| | Power factor | % | 90 | 90 | 90 |
| Heating Low temp. | Power input | kW | 29.2 | 29.2 | 29.2 |
| Starting amperes | | A | 106 | 107 | 109 |
| COMPRESSOR | | | | | |
| Type - Q'ty | | | Hermetic type x 3 | Hermetic type x 3 | |
| Motor output | | kW | 3 + 4.5 x 2 | 3 + 4.5 x 2 | |
| Refrigeration oil | Type | | FV68S (Ether oil) | | |
| | Charge amount | L | 5.9 | 5.9 | |
| Crankcase heater | | W | 25 + 32 x 2 | 25 + 32 x 2 | |
| Capacity control | | % | – | | |
| Refrigerant amount at shipment | | kg | R410A - 13.0 | R410A - 13.0 | |
| Refrigerant control | | | Electronic expansion valve | | |
| Defrost method | | | Reverse-cycle defrost, outdoor unit cycle defrost | | |
| Heat exchanger | | | Tube with plate fins | | |
| FAN DEVICE | | | | | |
| Type - Q'ty | | | Propeller fan x 1 | Propeller fan x 1 | |
| Air circulation | | $m^3$ / min | 220 | 220 | |
| External static pressure | | Pa | 0 | 0 | |
| Motor output (No. of poles) | | kW | 0.7 (8P) | 0.7 (8P) | |
| Protective devices | | | High pressure switch, overcurrent (CT method) | | |
| TUBING | | | | | |
| Refrigerant tubing | Gas tube | mm (in.) | ø28.58 (1-1 / 8) (Brazing) | | |
| | Liquid tube | mm (in.) | ø12.7 (1 / 2) (Flare nut) | | |
| | Balance tube | mm (in.) | ø6.35 (1 / 4) (Flare nut) | | |
| Drain port | | | – | | |
| External air temperature operation range | | °C | Cooling: -10 ~ 43 °C (DB) | Heating: -20 ~ 15 °C (WB) | |
| Operation sound (Hi) | | dB-A | 65.0 (Quiet mode: 62.0) | | |
| Primary accessories | | | Connection tubing (ø28.58) | Connection tubing (ø28.58) | |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

* Performance, electrical characteristics values and operating sound are based on JIS B8616 package A/C.
(Cooling: Indoor intake air temp. 27°C DB / 19°C WB. Outdoor intake air temp. 35°C DB.)
(Heating [standard]: Indoor intake air temp. 20°C DB. Outdoor intake air temp. 7°C DB / 6°C WB.)
(Heating [low temp.]: Indoor intake air temp. 20°C DB / 15°C WB or less. Outdoor intake air temp. 2°C DB / 1°C WB.)

# 1. Outdoor Unit

**Unit Specifications (11)**

| MODEL NAME | | | W-2WAY ECO-i Capacity Control Outdoor Unit <34 horsepower> | | | |
|---|---|---|---|---|---|---|
| GENERAL MODEL No. | | | | SPW-WC3405DXHN8 | | |
| COMPONENT OUTDOOR UNIT | | | | SPW-C1305DXHN8 | SPW-C0905DXHN8 | SPW-C0905DXHN8 |
| POWER SOURCE | | | | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz |
| PERFORMANCE | | | | | | |
| Cooling capacity | | | kW (BTU / h) | 96.0 (327,600) | | |
| Heating capacity | | | kW (BTU / h) | 108.0 (368,500) | | |
| COP | | Cooling standard | – | 3.50 | | |
| | | Heating standard | – | 4.00 | | |
| | | Heating / Cooling ave. | – | 3.75 | | |
| UNIT DIMENSIONS | | Height | mm (in.) | 1887 (74-9 / 32) | | |
| | | Width | mm (in.) | 2870 (112-1 / 1) | | |
| | | Depth | mm (in.) | 890 (Ceiling dimension) (+60) (35-1 / 32) (+2 - 3 / 8) | | |
| Net weight | | | kg (lbs.) | 345 (760) | 295 (650) | 295 (650) |
| Color (Munsell code) | | | | Silky shade (1Y 8.5 / 0.5) | | |
| ELECTRICAL RATINGS | | | | | | |
| Voltage rating | | | V | 380 | 400 | 415 |
| Cooling | | Running amperes | A | 45.4 | 43.1 | 41.6 |
| | | Power input | kW | 27.4 | 27.4 | 27.4 |
| | | Power factor | % | 92 | 92 | 92 |
| Heating | Standard | Running amperes | A | 44.7 | 42.5 | 41.0 |
| | | Power input | kW | 27.0 | 27.0 | 27.0 |
| | | Power factor | % | 92 | 92 | 92 |
| | Low temp. | Power input | kW | 30.0 | 30.0 | 30.0 |
| Starting amperes | | | A | 103 | 104 | 106 |
| COMPRESSOR | | | | | | |
| Type - Q'ty | | | | Hermetic type x 3 | Hermetic type x 2 | Hermetic type x 2 |
| Motor output | | | kW | 3 + 3.75 x 2 | 3 + 3.75 | 3 + 3.75 |
| Refrigeration oil | | Type | | FV68S (Ether oil) | | |
| | | Charge amount | L | 5.9 | 4.9 | 4.9 |
| Crankcase heater | | | W | 25 + 32 x 2 | 25 + 32 | 25 + 32 |
| Capacity control | | | % | – | | |
| Refrigerant amount at shipment | | | kg | R410A - 13.0 | R410A - 12.0 | R410A - 12.0 |
| Refrigerant control | | | | Electronic expansion valve | | |
| Defrost method | | | | Reverse-cycle defrost, outdoor unit cycle defrost | | |
| Heat exchanger | | | | Tube with plate fins | | |
| FAN DEVICE | | | | | | |
| Type - Q'ty | | | | Propeller fan x 1 | Propeller fan x 1 | Propeller fan x 1 |
| Air circulation | | | $m^3$ / min | 200 | 160 | 160 |
| External static pressure | | | Pa | 0 | 0 | 0 |
| Motor output (No. of poles) | | | kW | 0.7 (8P) | 0.7 (8P) | 0.7 (8P) |
| Protective devices | | | | High pressure switch, overcurrent (CT method) | | |
| TUBING | | | | | | |
| Refrigerant tubing | | Gas tube | mm (in.) | ø25.4 (1) (Brazing) | ø22.22 (7 / 8) (Brazing) | |
| | | Liquid tube | mm (in.) | ø12.7 (1 / 2) (Flare nut) | ø9.52 (3 / 8) (Flare nut) | |
| | | Balance tube | mm (in.) | ø6.35 (1 / 4) (Flare nut) | | |
| Drain port | | | | – | | |
| External air temperature operation range | | | °C | Cooling: -10 ~ 43 °C (DB) Heating: -20 ~ 15 °C (WB) | | |
| Operation sound (Hi) | | | dB-A | 63.0 (Quiet mode: 60.0) | | |
| Primary accessories | | | | None | Connection tubing (ø22.22) | Connection tubing (ø22.22) |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

* Performance, electrical characteristics values and operating sound are based on JIS B8616 package A/C.
(Cooling: Indoor intake air temp. 27°C DB / 19°C WB. Outdoor intake air temp. 35°C DB.)
(Heating [standard]: Indoor intake air temp. 20°C DB. Outdoor intake air temp. 7°C DB / 6°C WB.)
(Heating [low temp.]: Indoor intake air temp. 20°C DB / 15°C WB or less. Outdoor intake air temp. 2°C DB / 1°C WB.)

# 1. Outdoor Unit

**Unit Specifications (12)**

| MODEL NAME | | | | W-2WAY ECO-i Capacity Control Outdoor Unit <36 horsepower> | | |
|---|---|---|---|---|---|---|
| GENERAL MODEL No. | | | | SPW-WC3605DXHN8 | | |
| COMPONENT OUTDOOR UNIT | | | | SPW-C1405DXHN8 | SPW-C0905DXHN8 | SPW-C0905DXHN8 |
| POWER SOURCE | | | | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz |
| PERFORMANCE | | | | | | |
| Cooling capacity | | | kW (BTU / h) | 101.0 (344,600) | | |
| Heating capacity | | | kW (BTU / h) | 113.0 (358,600) | | |
| COP | | Cooling standard | – | 3.47 | | |
| | | Heating standard | – | 3.94 | | |
| | | Heating / Cooling ave. | – | 3.71 | | |
| UNIT DIMENSIONS | | Height | mm (in.) | 1887 (74-9 / 32) | | |
| | | Width | mm (in.) | 2870 (112-1 / 1) | | |
| | | Depth | mm (in.) | 890 (Ceiling dimension) (+60) (35-1 / 32) (+2 - 3 / 8) | | |
| Net weight | | | kg (lbs.) | 345 (760) | 295 (650) | 295 (650) |
| Color (Munsell code) | | | | Silky shade (1Y 8.5 / 0.5) | | |
| ELECTRICAL RATINGS | | | | | | |
| Voltage rating | | | V | 380 | 400 | 415 |
| Cooling | | Running amperes | A | 48.2 | 45.8 | 44.1 |
| | | Power input | kW | 29.1 | 29.1 | 29.1 |
| | | Power factor | % | 92 | 92 | 92 |
| Heating | Standard | Running amperes | A | 47.6 | 45.2 | 43.5 |
| | | Power input | kW | 28.7 | 28.7 | 28.7 |
| | | Power factor | % | 92 | 92 | 92 |
| | Low temp. | Power input | kW | 31.9 | 31.9 | 31.9 |
| Starting amperes | | | A | 109 | 110 | 112 |
| COMPRESSOR | | | | | | |
| Type - Q'ty | | | | Hermetic type x 3 | Hermetic type x 2 | Hermetic type x 2 |
| Motor output | | | kW | 3 + 4.5 x 2 | 3 + 3.75 | 3 + 3.75 |
| Refrigeration oil | | Type | | FV68S (Ether oil) | | |
| | | Charge amount | L | 5.9 | 4.9 | 4.9 |
| Crankcase heater | | | W | 25 + 32 x 2 | 25 + 32 | 25 + 32 |
| Capacity control | | | % | – | | |
| Refrigerant amount at shipment | | | kg | R410A - 13.0 | R410A - 12.0 | R410A - 12.0 |
| Refrigerant control | | | | Electronic expansion valve | | |
| Defrost method | | | | Reverse-cycle defrost, outdoor unit cycle defrost | | |
| Heat exchanger | | | | Tube with plate fins | | |
| FAN DEVICE | | | | | | |
| Type - Q'ty | | | | Propeller fan x 1 | Propeller fan x 1 | Propeller fan x 1 |
| Air circulation | | | $m^3$ / min | 220 | 160 | 160 |
| External static pressure | | | Pa | 0 | 0 | 0 |
| Motor output (No. of poles) | | | kW | 0.7 (8P) | 0.7 (8P) | 0.7 (8P) |
| Protective devices | | | | High pressure switch, overcurrent (CT method) | | |
| TUBING | | | | | | |
| Refrigerant tubing | | Gas tube | mm (in.) | ø28.58 (1-1 / 8) (Brazing) | ø22.22 (7 / 8) (Brazing) | |
| | | Liquid tube | mm (in.) | ø12.7 (1 / 2) (Flare nut) | ø9.52 (3 / 8) (Flare nut) | |
| | | Balance tube | mm (in.) | ø6.35 (1 / 4) (Flare nut) | | |
| Drain port | | | | – | | |
| External air temperature operation range | | | °C | Cooling: -10 ~ 43 °C (DB) Heating: -20 ~ 15 °C (WB) | | |
| Operation sound (Hi) | | | dB-A | 63.5 (Quiet mode: 60.5) | | |
| Primary accessories | | | | Connection tubing (ø28.58) | Connection tubing (ø22.22) | Connection tubing (ø22.22) |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

* Performance, electrical characteristics values and operating sound are based on JIS B8616 package A/C.
(Cooling: Indoor intake air temp. 27°C DB / 19°C WB. Outdoor intake air temp. 35°C DB.)
(Heating [standard]: Indoor intake air temp. 20°C DB. Outdoor intake air temp. 7°C DB / 6°C WB.)
(Heating [low temp.]: Indoor intake air temp. 20°C DB / 15°C WB or less. Outdoor intake air temp. 2°C DB / 1°C WB.)

# 1. Outdoor Unit

**Unit Specifications (13)**

| MODEL NAME | | | W-2WAY ECO-i Capacity Control Outdoor Unit <38 horsepower> | | | |
|---|---|---|---|---|---|---|
| GENERAL MODEL No. | | | SPW-WC3805DXHN8 | | | |
| COMPONENT OUTDOOR UNIT | | | SPW-C1405DXHN8 | SPW-C1155DXHN8 | SPW-C0905DXHN8 | |
| POWER SOURCE | | | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz | |
| PERFORMANCE | | | | | | |
| Cooling capacity | | kW (BTU / h) | 107.0 (365,100) | | | |
| Heating capacity | | kW (BTU / h) | 119.0 (406,100) | | | |
| COP | Cooling standard | – | 3.47 | | | |
| | Heating standard | – | 3.89 | | | |
| | Heating / Cooling ave. | – | 3.68 | | | |
| UNIT DIMENSIONS | Height | mm (in.) | 1887 (74-9 / 32) | | | |
| | Width | mm (in.) | 2870 (112-1 / 1) | | | |
| | Depth | mm (in.) | 890 (Ceiling dimension) (+60) (35-1 / 32) (+2 - 3 / 8) | | | |
| Net weight | | kg (lbs.) | 345 (760) | 295 (650) | 295 (650) | |
| Color (Munsell code) | | | Silky shade (1Y 8.5 / 0.5) | | | |
| ELECTRICAL RATINGS | | | | | | |
| Voltage rating | | V | 380 | 400 | 415 | |
| Cooling | Running amperes | A | 51.0 | 48.0 | 47.0 | |
| | Power input | kW | 30.8 | 30.8 | 30.8 | |
| | Power factor | % | 92 | 92 | 92 | |
| Heating Standard | Running amperes | A | 51.0 | 48.0 | 46.0 | |
| | Power input | kW | 30.6 | 30.6 | 30.6 | |
| | Power factor | % | 92 | 92 | 92 | |
| Heating Low temp. | Power input | kW | 33.6 | 33.6 | 33.6 | |
| Starting amperes | | A | 112 | 112 | 115 | |
| COMPRESSOR | | | | | | |
| Type - Q'ty | | | Hermetic type x 3 | Hermetic type x 2 | Hermetic type x 2 | |
| Motor output | | kW | 3 + 4.5 x 2 | 4.5 + 4.5 | 3 + 3.75 | |
| Refrigeration oil | Type | | FV68S (Ether oil) | | | |
| | Charge amount | L | 5.9 | 4.9 | 4.9 | |
| Crankcase heater | | W | 25 + 32 x 2 | 25 + 32 | 25 + 32 | |
| Capacity control | | % | – | | | |
| Refrigerant amount at shipment | | kg | R410A - 13.0 | R410A - 12.0 | R410A - 12.0 | |
| Refrigerant control | | | Electronic expansion valve | | | |
| Defrost method | | | Reverse-cycle defrost, outdoor unit cycle defrost | | | |
| Heat exchanger | | | Tube with plate fins | | | |
| FAN DEVICE | | | | | | |
| Type - Q'ty | | | Propeller fan x 1 | Propeller fan x 1 | Propeller fan x 1 | |
| Air circulation | | $m^3$ / min | 220 | 180 | 160 | |
| External static pressure | | Pa | 0 | 0 | 0 | |
| Motor output (No. of poles) | | kW | 0.7 (8P) | 0.7 (8P) | 0.7 (8P) | |
| Protective devices | | | High pressure switch, overcurrent (CT method) | | | |
| TUBING | | | | | | |
| Refrigerant tubing | Gas tube | mm (in.) | ø28.58 (1-1 / 8) (Brazing) | ø25.4 (1) (Brazing) | ø22.22 (7 / 8) (Brazing) | |
| | Liquid tube | mm (in.) | ø12.7 (1 / 2) (Flare nut) | | ø9.52 (3 / 8) (Flare nut) | |
| | Balance tube | mm (in.) | ø6.35 (1 / 4) (Flare nut) | | | |
| Drain port | | | – | | | |
| External air temperature operation range | | °C | Cooling: -10 ~ 43 °C (DB) Heating: -20 ~ 15 °C (WB) | | | |
| Operation sound (Hi) | | dB-A | 63.5 (Quiet mode: 60.5) | | | |
| Primary accessories | | | Connection tubing (ø28.58) | Connection tubing (ø25.4) | Connection tubing (ø22.22) | |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

* Performance, electrical characteristics values and operating sound are based on JIS B8616 package A/C.
(Cooling: Indoor intake air temp. 27°C DB / 19°C WB. Outdoor intake air temp. 35°C DB.)
(Heating [standard]: Indoor intake air temp. 20°C DB. Outdoor intake air temp. 7°C DB / 6°C WB.)
(Heating [low temp.]: Indoor intake air temp. 20°C DB / 15°C WB or less. Outdoor intake air temp. 2°C DB / 1°C WB.)

# 1. Outdoor Unit

**Unit Specifications (14)**

| MODEL NAME | | | | W-2WAY ECO-i Capacity Control Outdoor Unit <40 horsepower> | | |
|---|---|---|---|---|---|---|
| GENERAL MODEL No. | | | | SPW-WC4005DXHN8 | | |
| COMPONENT OUTDOOR UNIT | | | | SPW-C1405DXHN8 | SPW-C1305DXHN8 | SPW-C0905DXHN8 |
| POWER SOURCE | | | | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz |
| PERFORMANCE | | | | | | |
| Cooling capacity | | | kW (BTU / h) | 113.0 (385,600) | | |
| Heating capacity | | | kW (BTU / h) | 127.0 (433,400) | | |
| COP | | Cooling standard | – | 3.45 | | |
| | | Heating standard | – | 3.91 | | |
| | | Heating / Cooling ave. | – | 3.68 | | |
| UNIT DIMENSIONS | | Height | mm (in.) | 1887 (74-9 / 32) | | |
| | | Width | mm (in.) | 2870 (112-1 / 1) | | |
| | | Depth | mm (in.) | 890 (Ceiling dimension) (+60) (35-1 / 32) (+2 - 3 / 8) | | |
| Net weight | | | kg (lbs.) | 345 (760) | 345 (760) | 295 (650) |
| Color (Munsell code) | | | | Silky shade (1Y 8.5 / 0.5) | | |
| ELECTRICAL RATINGS | | | | | | |
| Voltage rating | | | V | 380 | 400 | 415 |
| Cooling | | Running amperes | A | 55.0 | 52.0 | 50.0 |
| | | Power input | kW | 32.8 | 32.8 | 32.8 |
| | | Power factor | % | 91 | 91 | 91 |
| Heating | Standard | Running amperes | A | 54.0 | 52.0 | 50.0 |
| | | Power input | kW | 32.5 | 32.5 | 32.5 |
| | | Power factor | % | 91 | 91 | 91 |
| | Low temp. | Power input | kW | 35.9 | 35.9 | 35.9 |
| Starting amperes | | | A | 116 | 116 | 118 |
| COMPRESSOR | | | | | | |
| Type - Q'ty | | | | Hermetic type x 3 | Hermetic type x 3 | Hermetic type x 2 |
| Motor output | | | kW | 3 + 4.5 x 2 | 3 + 3.75 x 2 | 3 + 3.75 |
| Refrigeration oil | | Type | | FV68S (Ether oil) | | |
| | | Charge amount | L | 5.9 | 5.9 | 4.9 |
| Crankcase heater | | | W | 25 + 32 x 2 | 25 + 32 x 2 | 25 + 32 |
| Capacity control | | | % | – | | |
| Refrigerant amount at shipment | | | kg | R410A - 13.0 | R410A - 13.0 | R410A - 12.0 |
| Refrigerant control | | | | Electronic expansion valve | | |
| Defrost method | | | | Reverse-cycle defrost, outdoor unit cycle defrost | | |
| Heat exchanger | | | | Tube with plate fins | | |
| FAN DEVICE | | | | | | |
| Type - Q'ty | | | | Propeller fan x 1 | Propeller fan x 1 | Propeller fan x 1 |
| Air circulation | | | $m^3$ / min | 220 | 200 | 160 |
| External static pressure | | | Pa | 0 | 0 | 0 |
| Motor output (No. of poles) | | | kW | 0.7 (8P) | 0.7 (8P) | 0.7 (8P) |
| Protective devices | | | | High pressure switch, overcurrent (CT method) | | |
| TUBING | | | | | | |
| Refrigerant tubing | | Gas tube | mm (in.) | ø28.58 (1-1 / 8) (Brazing) | ø25.4 (1) (Brazing) | ø22.22 (7 / 8) (Brazing) |
| | | Liquid tube | mm (in.) | ø12.7 (1 / 2) (Flare nut) | | ø9.52 (3 / 8) (Flare nut) |
| | | Balance tube | mm (in.) | ø6.35 (1 / 4) (Flare nut) | | |
| Drain port | | | | – | | |
| External air temperature operation range | | | °C | Cooling: -10 ~ 43 °C (DB) Heating: -20 ~ 15 °C (WB) | | |
| Operation sound (Hi) | | | dB-A | 65.0 (Quiet mode: 62.0) | | |
| Primary accessories | | | | Connection tubing (ø28.58) | None | Connection tubing (ø22.22) |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

* Performance, electrical characteristics values and operating sound are based on JIS B8616 package A/C.
(Cooling: Indoor intake air temp. 27°C DB / 19°C WB. Outdoor intake air temp. 35°C DB.)
(Heating [standard]: Indoor intake air temp. 20°C DB. Outdoor intake air temp. 7°C DB / 6°C WB.)
(Heating [low temp.]: Indoor intake air temp. 20°C DB / 15°C WB or less. Outdoor intake air temp. 2°C DB / 1°C WB.)

# 1. Outdoor Unit

**Unit Specifications (15)**

| MODEL NAME | | | W-2WAY ECO-i Capacity Control Outdoor Unit <42 horsepower> | | | |
|---|---|---|---|---|---|---|
| GENERAL MODEL No. | | | | SPW-WC4205DXHN8 | | |
| COMPONENT OUTDOOR UNIT | | | | SPW-C1405DXHN8 | SPW-C1405DXHN8 | SPW-C0905DXHN8 |
| POWER SOURCE | | | | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz |
| PERFORMANCE | | | | | | |
| Cooling capacity | | | kW (BTU / h) | 118.0 (402,700) | | |
| Heating capacity | | | kW (BTU / h) | 132.0 (450,400) | | |
| COP | | Cooling standard | – | 3.42 | | |
| | | Heating standard | – | 3.86 | | |
| | | Heating / Cooling ave. | – | 3.64 | | |
| UNIT DIMENSIONS | | Height | mm (in.) | 1887 (74-9 / 32) | | |
| | | Width | mm (in.) | 2870 (112-1 / 1) | | |
| | | Depth | mm (in.) | 890 (Ceiling dimension) (+60) (35-1 / 32) (+2 - 3 / 8) | | |
| Net weight | | | kg (lbs.) | 345 (760) | 345 (760) | 295 (650) |
| Color (Munsell code) | | | | Silky shade (1Y 8.5 / 0.5) | | |
| ELECTRICAL RATINGS | | | | | | |
| Voltage rating | | | V | 380 | 400 | 415 |
| Cooling | | Running amperes | A | 58.0 | 55.0 | 53.0 |
| | | Power input | kW | 34.5 | 34.5 | 34.5 |
| | | Power factor | % | 91 | 91 | 91 |
| Heating | Standard | Running amperes | A | 57.0 | 54.0 | 52.0 |
| | | Power input | kW | 34.2 | 34.2 | 34.2 |
| | | Power factor | % | 91 | 91 | 91 |
| | Low temp. | Power input | kW | 37.8 | 37.8 | 37.8 |
| Starting amperes | | | A | 119 | 119 | 121 |
| COMPRESSOR | | | | | | |
| Type - Q'ty | | | | Hermetic type x 3 | Hermetic type x 3 | Hermetic type x 2 |
| Motor output | | | kW | 3 + 4.5 x 2 | 3 + 4.5 x 2 | 3 + 3.75 |
| Refrigeration oil | | Type | | FV68S (Ether oil) | | |
| | | Charge amount | L | 5.9 | 5.9 | 4.9 |
| Crankcase heater | | | W | 25 + 32 x 2 | 25 + 32 x 2 | 25 + 32 |
| Capacity control | | | % | – | | |
| Refrigerant amount at shipment | | | kg | R410A - 13.0 | R410A - 13.0 | R410A - 12.0 |
| Refrigerant control | | | | Electronic expansion valve | | |
| Defrost method | | | | Reverse-cycle defrost, outdoor unit cycle defrost | | |
| Heat exchanger | | | | Tube with plate fins | | |
| FAN DEVICE | | | | | | |
| Type - Q'ty | | | | Propeller fan x 1 | Propeller fan x 1 | Propeller fan x 1 |
| Air circulation | | | $m^3$ / min | 220 | 220 | 160 |
| External static pressure | | | Pa | 0 | 0 | 0 |
| Motor output (No. of poles) | | | kW | 0.7 (8P) | 0.7 (8P) | 0.7 (8P) |
| Protective devices | | | | High pressure switch, overcurrent (CT method) | | |
| TUBING | | | | | | |
| Refrigerant tubing | | Gas tube | mm (in.) | ø28.58 (1-1 / 8) (Brazing) | | ø22.22 (7 / 8) (Brazing) |
| | | Liquid tube | mm (in.) | ø12.7 (1 / 2) (Flare nut) | | ø9.52 (3 / 8) (Flare nut) |
| | | Balance tube | mm (in.) | ø6.35 (1 / 4) (Flare nut) | | |
| Drain port | | | | – | | |
| External air temperature operation range | | | °C | Cooling: -10 ~ 43 °C (DB) Heating: -20 ~ 15 °C (WB) | | |
| Operation sound (Hi) | | | dB-A | 65.5 (Quiet mode: 62.5) | | |
| Primary accessories | | | | Connection tubing (ø28.58) | Connection tubing (ø28.58) | Connection tubing (ø22.22) |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

* Performance, electrical characteristics values and operating sound are based on JIS B8616 package A/C.
(Cooling: Indoor intake air temp. 27°C DB / 19°C WB. Outdoor intake air temp. 35°C DB.)
(Heating [standard]: Indoor intake air temp. 20°C DB. Outdoor intake air temp. 7°C DB / 6°C WB.)
(Heating [low temp.]: Indoor intake air temp. 20°C DB / 15°C WB or less. Outdoor intake air temp. 2°C DB / 1°C WB.)

# 1. Outdoor Unit

**Unit Specifications (16)**

| MODEL NAME | | | W-2WAY ECO-i Capacity Control Outdoor Unit <44 horsepower> | | | |
|---|---|---|---|---|---|---|
| GENERAL MODEL No. | | | SPW-WC4405DXHN8 | | | |
| COMPONENT OUTDOOR UNIT | | | SPW-C1405DXHN8 | SPW-C1405DXHN8 | SPW-C1155DXHN8 | |
| POWER SOURCE | | | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz | |
| PERFORMANCE | | | | | | |
| Cooling capacity | | kW (BTU / h) | 124.0 (423,100) | | | |
| Heating capacity | | kW (BTU / h) | 138.0 (470,900) | | | |
| COP | Cooling standard | – | 3.43 | | | |
| | Heating standard | – | 3.83 | | | |
| | Heating / Cooling ave. | – | 3.63 | | | |
| UNIT DIMENSIONS | Height | mm (in.) | 1887 (74-9 / 32) | | | |
| | Width | mm (in.) | 2870 (112-1 / 1) | | | |
| | Depth | mm (in.) | 890 (Ceiling dimension) (+60) (35-1 / 32) (+2 - 3 / 8) | | | |
| Net weight | | kg (lbs.) | 345 (760) | 345 (760) | 295 (650) | |
| Color (Munsell code) | | | Silky shade (1Y 8.5 / 0.5) | | | |
| ELECTRICAL RATINGS | | | | | | |
| Voltage rating | | V | 380 | 400 | 415 | |
| Cooling | Running amperes | A | 60.0 | 57.0 | 55.0 | |
| | Power input | kW | 36.2 | 36.2 | 36.2 | |
| | Power factor | % | 91 | 91 | 91 | |
| Heating Standard | Running amperes | A | 60.0 | 57.0 | 55.0 | |
| | Power input | kW | 36.0 | 36.0 | 36.0 | |
| | Power factor | % | 91 | 91 | 91 | |
| Heating Low temp. | Power input | kW | 39.6 | 39.6 | 39.6 | |
| Starting amperes | | A | 121 | 121 | 124 | |
| COMPRESSOR | | | | | | |
| Type - Q'ty | | | Hermetic type x 3 | Hermetic type x 3 | Hermetic type x 2 | |
| Motor output | | kW | 3 + 4.5 x 2 | 3 + 4.5 x 2 | 4.5 + 4.5 | |
| Refrigeration oil | Type | | FV68S (Ether oil) | | | |
| | Charge amount | L | 5.9 | 5.9 | 4.9 | |
| Crankcase heater | | W | 25 + 32 x 2 | 25 + 32 x 2 | 25 + 32 | |
| Capacity control | | % | – | | | |
| Refrigerant amount at shipment | | kg | R410A - 13.0 | R410A - 13.0 | R410A - 12.0 | |
| Refrigerant control | | | Electronic expansion valve | | | |
| Defrost method | | | Reverse-cycle defrost, outdoor unit cycle defrost | | | |
| Heat exchanger | | | Tube with plate fins | | | |
| FAN DEVICE | | | | | | |
| Type - Q'ty | | | Propeller fan x 1 | Propeller fan x 1 | Propeller fan x 1 | |
| Air circulation | | $m^3$ / min | 220 | 220 | 180 | |
| External static pressure | | Pa | 0 | 0 | 0 | |
| Motor output (No. of poles) | | kW | 0.7 (8P) | 0.7 (8P) | 0.7 (8P) | |
| Protective devices | | | High pressure switch, overcurrent (CT method) | | | |
| TUBING | | | | | | |
| Refrigerant tubing | Gas tube | mm (in.) | ø28.58 (1-1 / 8) (Brazing) | | ø25.4 (1) (Brazing) | |
| | Liquid tube | mm (in.) | ø12.7 (1 / 2) (Flare nut) | | | |
| | Balance tube | mm (in.) | ø6.35 (1 / 4) (Flare nut) | | | |
| Drain port | | | – | | | |
| External air temperature operation range | | °C | Cooling: -10 ~ 43 °C (DB) Heating: -20 ~ 15 °C (WB) | | | |
| Operation sound (Hi) | | dB-A | 65.5 (Quiet mode: 62.5) | | | |
| Primary accessories | | | Connection tubing (ø28.58) | Connection tubing (ø28.58) | Connection tubing (ø25.4) | |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

* Performance, electrical characteristics values and operating sound are based on JIS B8616 package A/C.
(Cooling: Indoor intake air temp. 27°C DB / 19°C WB. Outdoor intake air temp. 35°C DB.)
(Heating [standard]: Indoor intake air temp. 20°C DB. Outdoor intake air temp. 7°C DB / 6°C WB.)
(Heating [low temp.]: Indoor intake air temp. 20°C DB / 15°C WB or less. Outdoor intake air temp. 2°C DB / 1°C WB.)

# 1. Outdoor Unit

**Unit Specifications (17)**

| MODEL NAME | | | W-2WAY ECO-i Capacity Control Outdoor Unit <46 horsepower> | | | |
|---|---|---|---|---|---|---|
| GENERAL MODEL No. | | | | SPW-WC4605DXHN8 | | |
| COMPONENT OUTDOOR UNIT | | | | SPW-C1405DXHN8 | SPW-C1405DXHN8 | SPW-C1305DXHN8 |
| POWER SOURCE | | | | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz |
| PERFORMANCE | | | | | | |
| Cooling capacity | | | kW (BTU / h) | 130.0 (443,600) | | |
| Heating capacity | | | kW (BTU / h) | 145.0 (494,800) | | |
| COP | | Cooling standard | – | 3.40 | | |
| | | Heating standard | – | 3.83 | | |
| | | Heating / Cooling ave. | – | 3.62 | | |
| UNIT DIMENSIONS | | Height | mm (in.) | 1887 (74-9 / 32) | | |
| | | Width | mm (in.) | 2870 (112-1 / 1) | | |
| | | Depth | mm (in.) | 890 (Ceiling dimension) (+60) (35-1 / 32) (+2 - 3 / 8) | | |
| Net weight | | | kg (lbs.) | 345 (760) | 345 (760) | 345 (760) |
| Color (Munsell code) | | | | Silky shade (1Y 8.5 / 0.5) | | |
| ELECTRICAL RATINGS | | | | | | |
| Voltage rating | | | V | 380 | 400 | 415 |
| Cooling | | Running amperes | A | 64.0 | 61.0 | 59.0 |
| | | Power input | kW | 38.2 | 38.2 | 38.2 |
| | | Power factor | % | 90 | 90 | 90 |
| Heating | Standard | Running amperes | A | 64.0 | 61.0 | 59.0 |
| | | Power input | kW | 37.9 | 37.9 | 37.9 |
| | | Power factor | % | 90 | 90 | 90 |
| | Low temp. | Power input | kW | 41.9 | 41.9 | 41.9 |
| Starting amperes | | | A | 123 | 122 | 124 |
| COMPRESSOR | | | | | | |
| Type - Q'ty | | | | Hermetic type x 3 | Hermetic type x 3 | Hermetic type x 3 |
| Motor output | | | kW | 3 + 4.5 x 2 | 3 + 4.5 x 2 | 3 + 3.75 x 2 |
| Refrigeration oil | | Type | | FV68S (Ether oil) | | |
| | | Charge amount | L | 5.9 | 5.9 | 5.9 |
| Crankcase heater | | | W | 25 + 32 x 2 | 25 + 32 x 2 | 25 + 32 x 2 |
| Capacity control | | | % | – | | |
| Refrigerant amount at shipment | | | kg | R410A - 13.0 | R410A - 13.0 | R410A - 13.0 |
| Refrigerant control | | | | Electronic expansion valve | | |
| Defrost method | | | | Reverse-cycle defrost, outdoor unit cycle defrost | | |
| Heat exchanger | | | | Tube with plate fins | | |
| FAN DEVICE | | | | | | |
| Type - Q'ty | | | | Propeller fan x 1 | Propeller fan x 1 | Propeller fan x 1 |
| Air circulation | | | $m^3$ / min | 220 | 220 | 200 |
| External static pressure | | | Pa | 0 | 0 | 0 |
| Motor output (No. of poles) | | | kW | 0.7 (8P) | 0.7 (8P) | 0.7 (8P) |
| Protective devices | | | | High pressure switch, overcurrent (CT method) | | |
| TUBING | | | | | | |
| Refrigerant tubing | | Gas tube | mm (in.) | ø28.58 (1-1 / 8) (Brazing) | | ø25.4 (1) (Brazing) |
| | | Liquid tube | mm (in.) | ø12.7 (1 / 2) (Flare nut) | | |
| | | Balance tube | mm (in.) | ø6.35 (1 / 4) (Flare nut) | | |
| Drain port | | | | – | | |
| External air temperature operation range | | | °C | Cooling: -10 ~ 43 °C (DB) | | Heating: -20 ~ 15 °C (WB) |
| Operation sound (Hi) | | | dB-A | 66.5 (Quiet mode: 63.5) | | |
| Primary accessories | | | | Connection tubing (ø28.58) | Connection tubing (ø28.58) | None |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

* Performance, electrical characteristics values and operating sound are based on JIS B8616 package A/C.
(Cooling: Indoor intake air temp. 27°C DB / 19°C WB. Outdoor intake air temp. 35°C DB.)
(Heating [standard]: Indoor intake air temp. 20°C DB. Outdoor intake air temp. 7°C DB / 6°C WB.)
(Heating [low temp.]: Indoor intake air temp. 20°C DB / 15°C WB or less. Outdoor intake air temp. 2°C DB / 1°C WB.)

# 1. Outdoor Unit

**Unit Specifications (18)**

| MODEL NAME | | | W-2WAY ECO-i Capacity Control Outdoor Unit <48 horsepower> | | | |
|---|---|---|---|---|---|---|
| GENERAL MODEL No. | | | SPW-WC4805DXHN8 | | | |
| COMPONENT OUTDOOR UNIT | | | SPW-C1405DXHN8 | SPW-C1405DXHN8 | SPW-C1405DXHN8 | |
| POWER SOURCE | | | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz | 380 - 400 - 415 V / 3N / 50 Hz | |
| PERFORMANCE | | | | | | |
| Cooling capacity | | kW (BTU / h) | 135.0 (460,700) | | | |
| Heating capacity | | kW (BTU / h) | 150.0 (511,800) | | | |
| COP | Cooling standard | – | 3.38 | | | |
| | Heating standard | – | 3.79 | | | |
| | Heating / Cooling ave. | – | 3.59 | | | |
| UNIT DIMENSIONS | Height | mm (in.) | 1887 (74-9 / 32) | | | |
| | Width | mm (in.) | 2870 (112-1 / 1) | | | |
| | Depth | mm (in.) | 890 (Ceiling dimension) (+60) (35-1 / 32) (+2 - 3 / 8) | | | |
| Net weight | | kg (lbs.) | 345 (760) | 345 (760) | 345 (760) | |
| Color (Munsell code) | | | Silky shade (1Y 8.5 / 0.5) | | | |
| ELECTRICAL RATINGS | | | | | | |
| Voltage rating | | V | 380 | 400 | 415 | |
| Cooling | Running amperes | A | 67.0 | 64.0 | 62.0 | |
| | Power input | kW | 39.9 | 39.9 | 39.9 | |
| | Power factor | % | 90 | 90 | 90 | |
| Heating Standard | Running amperes | A | 67.0 | 64.0 | 61.0 | |
| | Power input | kW | 39.6 | 39.6 | 39.6 | |
| | Power factor | % | 90 | 90 | 90 | |
| Heating Low temp. | Power input | kW | 43.8 | 43.8 | 43.8 | |
| Starting amperes | | A | 128 | 128 | 130 | |
| COMPRESSOR | | | | | | |
| Type - Q'ty | | | Hermetic type x 3 | Hermetic type x 3 | Hermetic type x 3 | |
| Motor output | | kW | 3 + 4.5 x 2 | 3 + 4.5 x 2 | 3 + 4.5 x 2 | |
| Refrigeration oil | Type | | FV68S (Ether oil) | | | |
| | Charge amount | L | 5.9 | 5.9 | 5.9 | |
| Crankcase heater | | W | 25 + 32 x 2 | 25 + 32 x 2 | 25 + 32 x 2 | |
| Capacity control | | % | – | | | |
| Refrigerant amount at shipment | | kg | R410A - 13.0 | R410A - 13.0 | R410A - 13.0 | |
| Refrigerant control | | | Electronic expansion valve | | | |
| Defrost method | | | Reverse-cycle defrost, outdoor unit cycle defrost | | | |
| Heat exchanger | | | Tube with plate fins | | | |
| FAN DEVICE | | | | | | |
| Type - Q'ty | | | Propeller fan x 1 | Propeller fan x 1 | Propeller fan x 1 | |
| Air circulation | | $m^3$ / min | 220 | 220 | 220 | |
| External static pressure | | Pa | 0 | 0 | 0 | |
| Motor output (No. of poles) | | kW | 0.7 (8P) | 0.7 (8P) | 0.7 (8P) | |
| Protective devices | | | High pressure switch, overcurrent (CT method) | | | |
| TUBING | | | | | | |
| Refrigerant tubing | Gas tube | mm (in.) | ø28.58 (1-1 / 8) (Brazing) | | | |
| | Liquid tube | mm (in.) | ø12.7 (1 / 2) (Flare nut) | | | |
| | Balance tube | mm (in.) | ø6.35 (1 / 4) (Flare nut) | | | |
| Drain port | | | – | | | |
| External air temperature operation range | | °C | Cooling: -10 ~ 43 °C (DB) Heating: -20 ~ 15 °C (WB) | | | |
| Operation sound (Hi) | | dB-A | 67.0 (Quiet mode: 64.0) | | | |
| Primary accessories | | | Connection tubing (ø28.58) | Connection tubing (ø28.58) | Connection tubing (ø28.58) | |

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

* Performance, electrical characteristics values and operating sound are based on JIS B8616 package A/C.
(Cooling: Indoor intake air temp. 27°C DB / 19°C WB. Outdoor intake air temp. 35°C DB.)
(Heating [standard]: Indoor intake air temp. 20°C DB. Outdoor intake air temp. 7°C DB / 6°C WB.)
(Heating [low temp.]: Indoor intake air temp. 20°C DB / 15°C WB or less. Outdoor intake air temp. 2°C DB / 1°C WB.)

# 1. Outdoor Unit

## 1-2. Dimensional Data

### SPW-C0705, C0905, C1105, C1305, C1405DXHN8

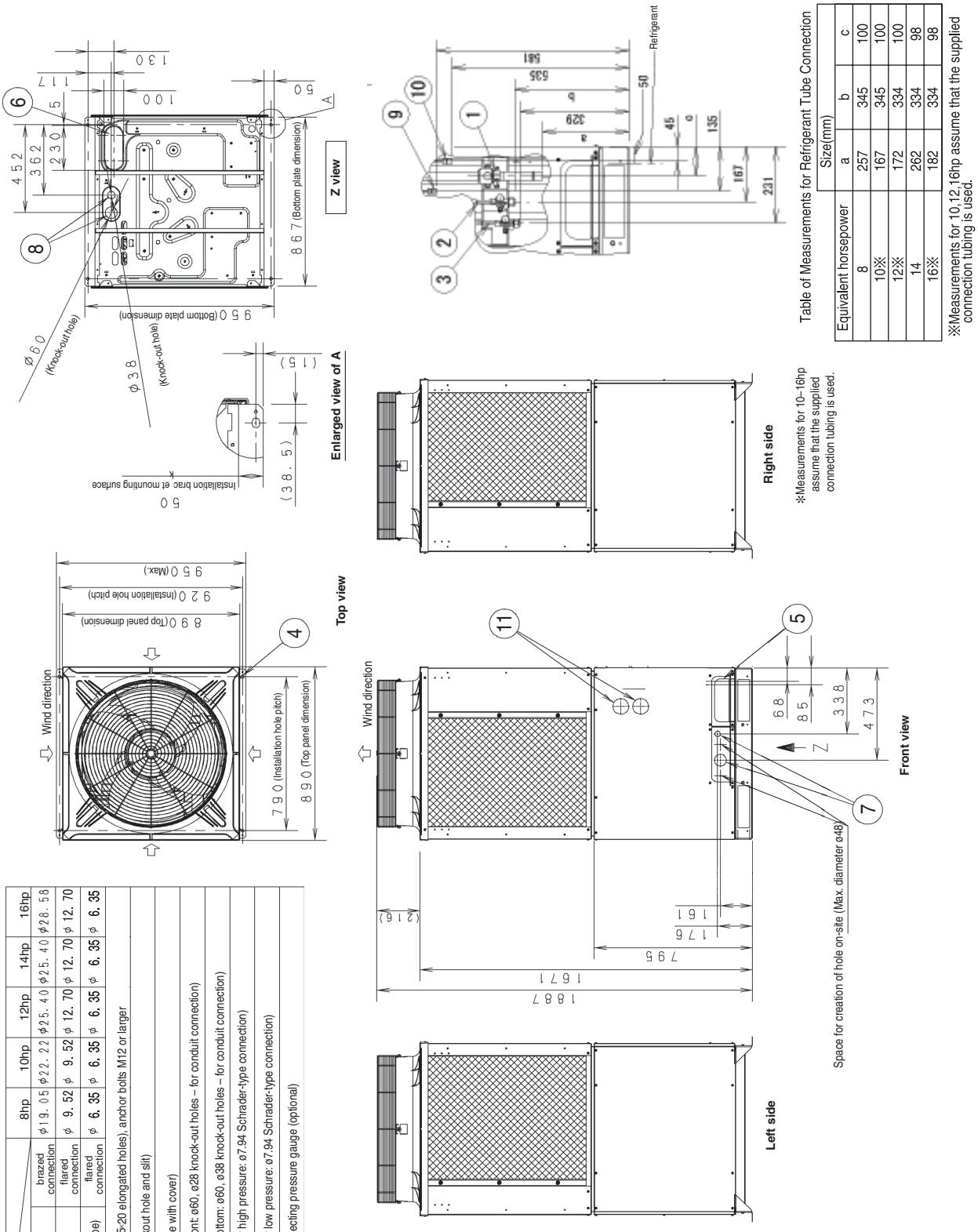



Table of Measurements for Refrigerant Tube Connection

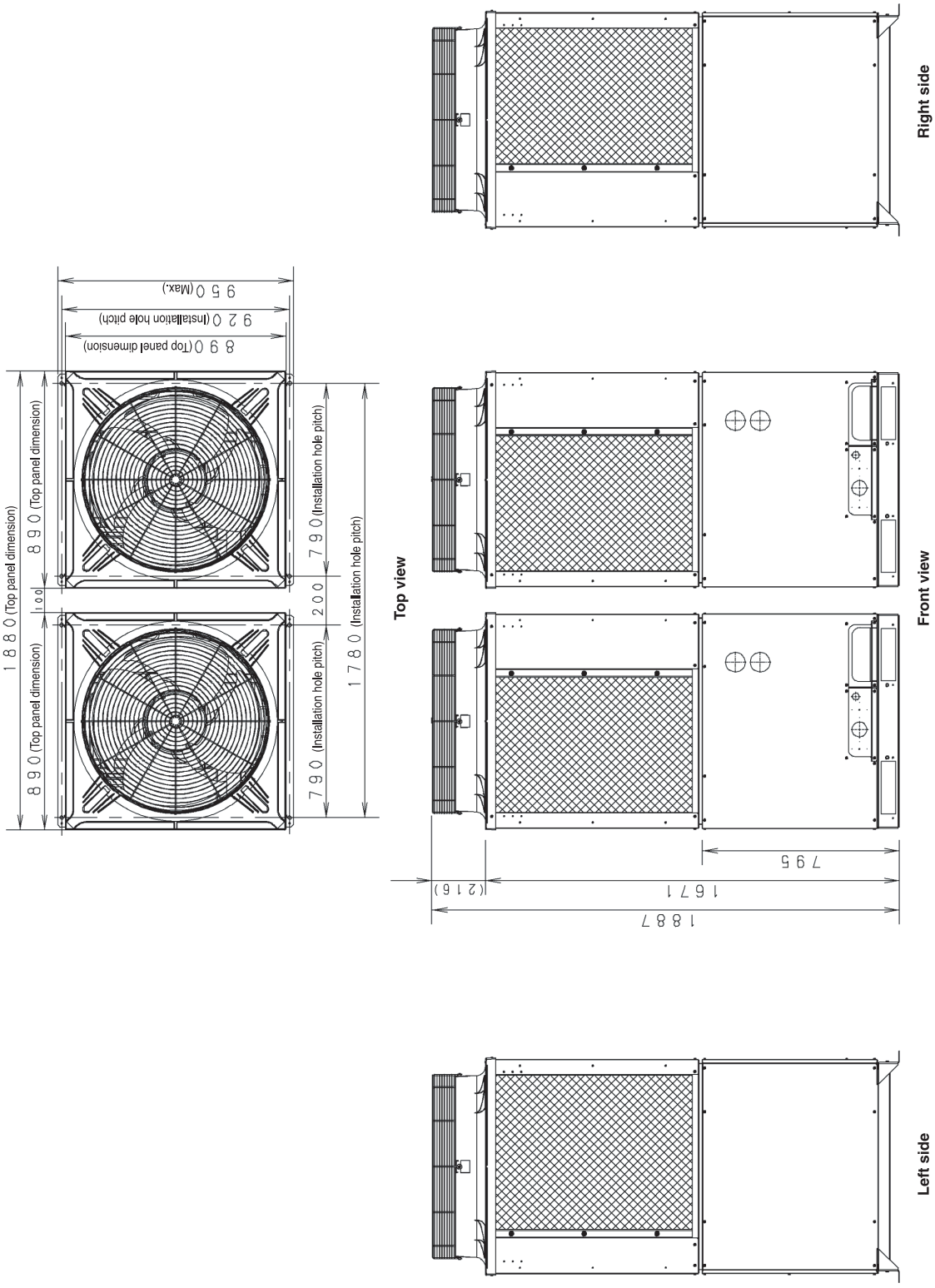
| Equivalent horsepower | Size(mm) a | b | c |
|---|---|---|---|
| 8 | 257 | 345 | 100 |
| 10※ | 167 | 345 | 100 |
| 12※ | 172 | 334 | 100 |
| 14 | 262 | 334 | 98 |
| 16※ | 182 | 334 | 98 |

※Measurements for 10,12,16hp assume that the supplied connection tubing is used.

| | | | 8hp | 10hp | 12hp | 14hp | 16hp |
|---|---|---|---|---|---|---|---|
| ① | Refrigerant (gas tube) | brazed connection | φ19.05 | φ22.22 | φ25.40 | φ25.40 | φ28.58 |
| ② | Refrigerant (liquid tube) | flared connection | φ 9.52 | φ 9.52 | φ 12.70 | φ 12.70 | φ 12.70 |
| ③ | Refrigerant (balance tube) | flared connection | φ 6.35 | φ 6.35 | φ 6.35 | φ 6.35 | φ 6.35 |
| ④ | Installation holes (4 – 15×20 elongated holes), anchor bolts M12 or larger | | | | | | |
| ⑤ | Refrigerant (front: knockout hole and slit) | | | | | | |
| ⑥ | Tubing port (bottom: hole with cover) | | | | | | |
| ⑦ | Electrical wiring port (front: ø60, ø28 knock-out holes – for conduit connection) | | | | | | |
| ⑧ | Electrical wiring port (bottom: ø60, ø38 knock-out holes – for conduit connection) | | | | | | |
| ⑨ | Pressure outlet port (for high pressure: ø7.94 Schrader-type connection) | | | | | | |
| ⑩ | Pressure outlet port (for low pressure: ø7.94 Schrader-type connection) | | | | | | |
| ⑪ | Knock-out hole for connecting pressure gauge (optional) | | | | | | |

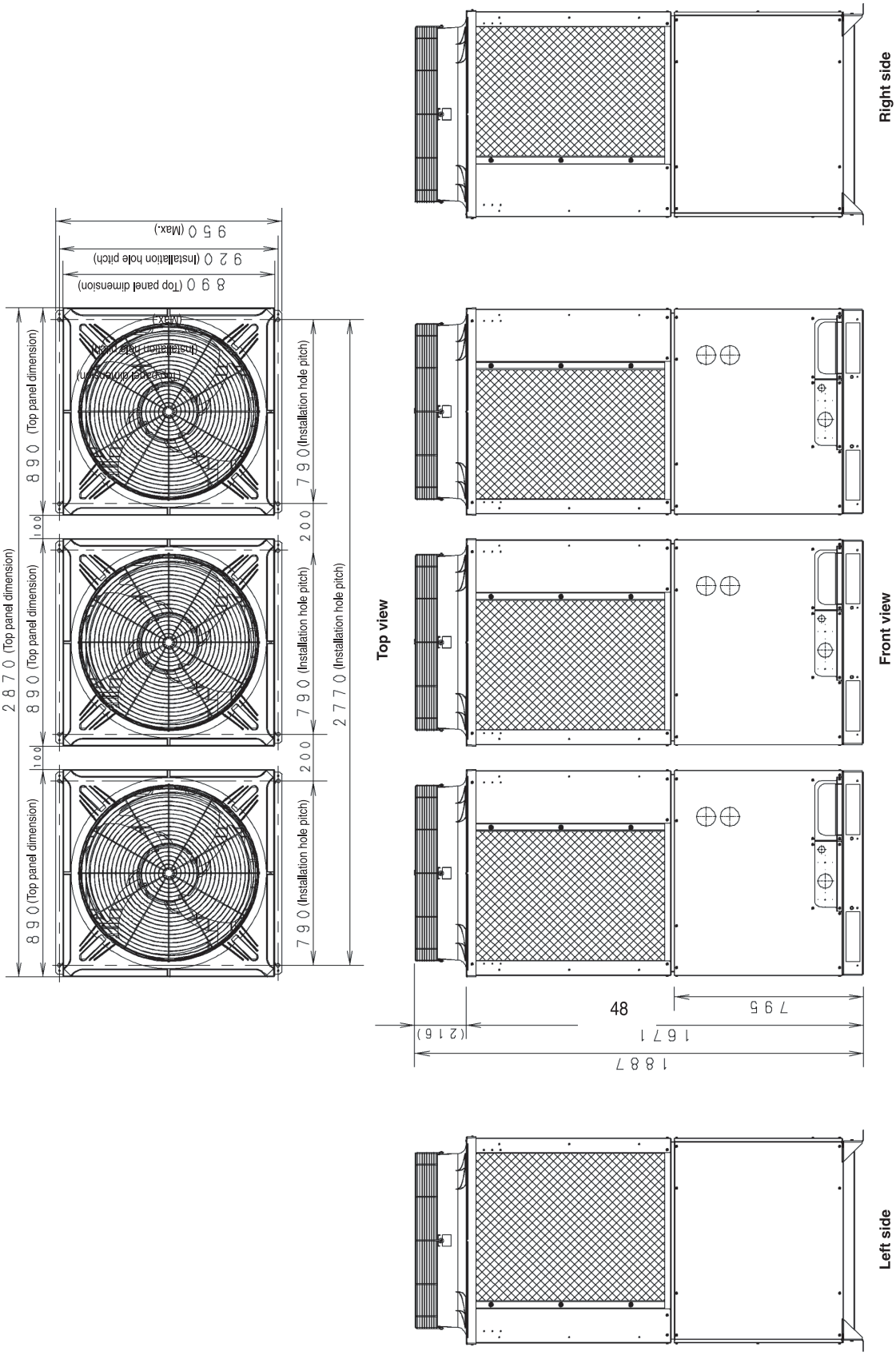
# 1. Outdoor Unit

## 1-3. Multiple Unit Installation Example




| Equivalent horsepower | | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 |
|---|---|---|---|---|---|---|---|---|---|
| 8 | C0705DXHN8 | ○ | — | — | — | — | — | — | — |
| 10 | C0905DXHN8 | ○ | ○○ | ○ | ○ | ○ | — | — | — |
| 12 | C1155DXHN8 | — | — | ○ | — | — | ○ | — | — |
| 14 | C1305DXHN8 | — | — | — | ○ | — | — | ○ | — |
| 16 | C1405DXHN8 | — | — | — | — | ○ | ○ | ○ | ○○ |

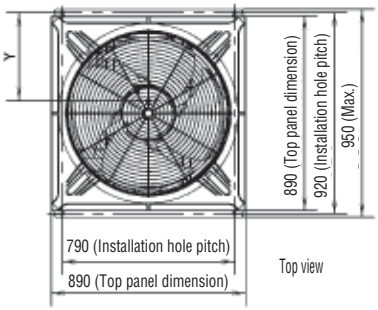
# 1. Outdoor Unit



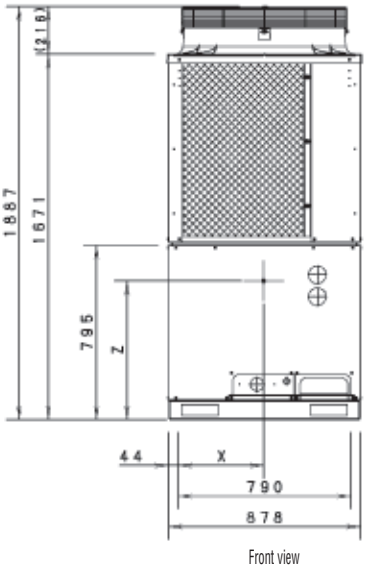

| Equivalent horsepower | | 34 | 36 | 38 | 40 | 42 | 44 | 46 | 48 WRZP1350B |
|---|---|---|---|---|---|---|---|---|---|
| 8 | C0705DXHN8 | — | — | — | — | — | — | — | — |
| 10 | C0905DXHN8 | ○ | ○ | ○ | ○ | ○ | — | — | — |
| 12 | C1155DXHN8 | — | — | ○ | — | — | ○ | — | — |
| 14 | C1305DXHN8 | ○ | — | — | ○ | — | — | ○ | — |
| 16 | C1405DXHN8 | — | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

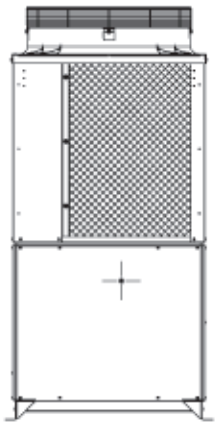
# 1. Outdoor Unit

### Position of center of gravity

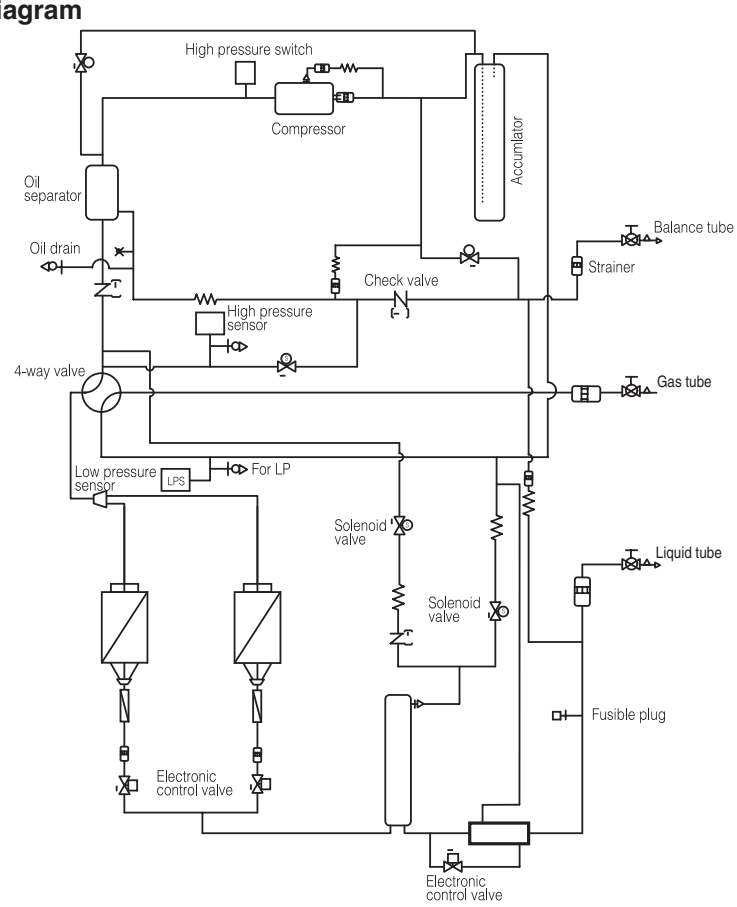



| MODEL | Position of center of gravity(mm) | | | Weight (kg) |
|---|---|---|---|---|
| | X | Y | Z | |
| SPW-C0705DXHN8 | 390 | 450 | 774 | 245 |
| SPW-C0905DXHN8 | 332 | 481 | 697 | 295 |
| SPW-C1155DXHN8 | | | | |
| SPW-C1305DXHN8 | 374 | 486 | 654 | 345 |
| SPW-C1405DXHN8 | | | | |



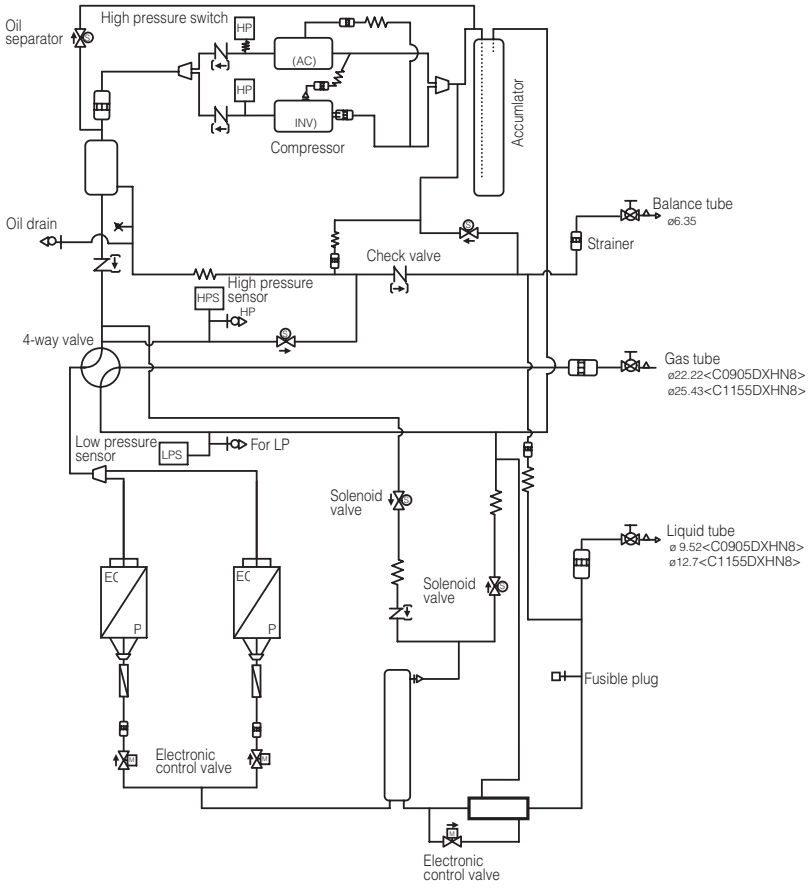

### 1-4. Refrigerant Flow Diagram
### SPW-C0705DXHN8



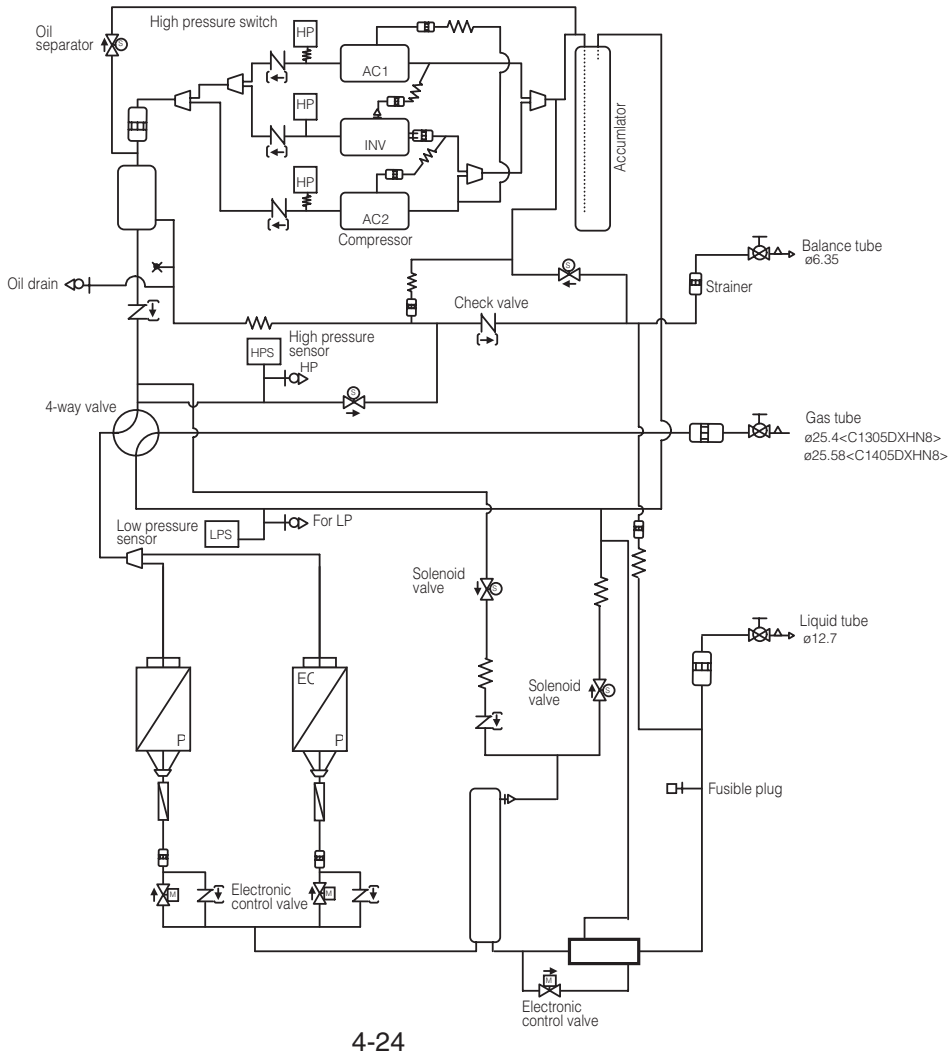

4

# 1. Outdoor Unit

**SPW-C0905DXHN8**
**-C1155DXHN8**




**SPW-C1305DXHN8**
**-C1405DXHN8**



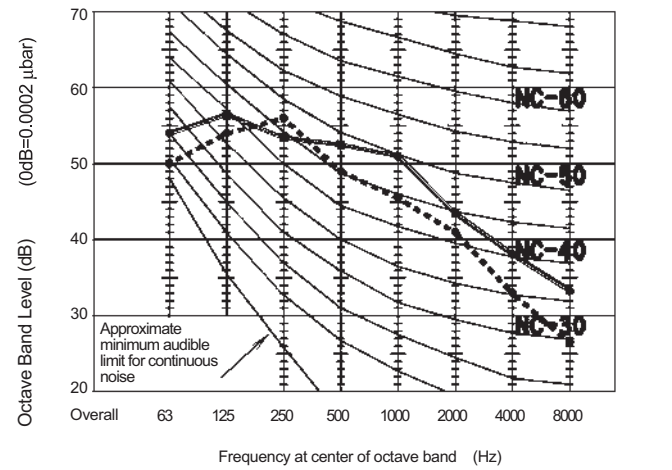

4

# 1. Outdoor Unit

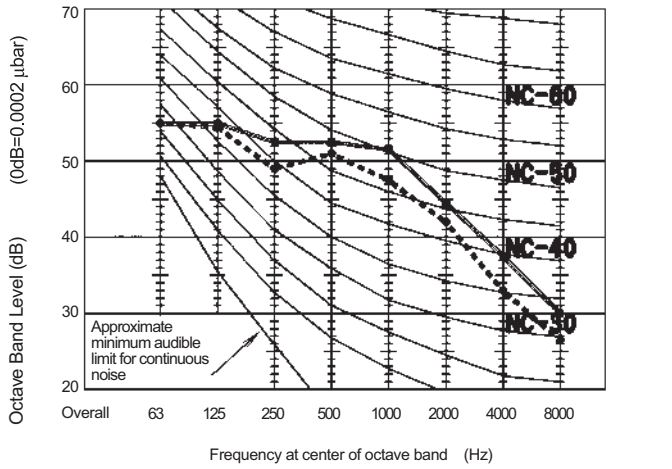
## 1-5. Noise Criterion Curves

### SPW-C0705, C0905, C1155, C1305, C1405 DXHN8

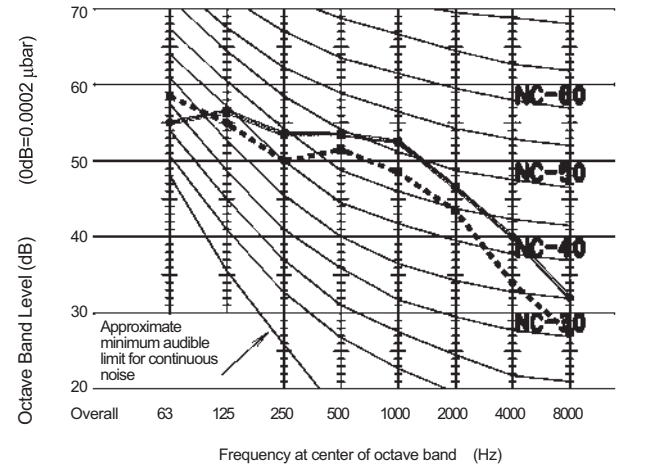
| MODEL | SPW-C0705DXHN8 |
|---|---|
| SOUND LEVEL dB(A) (Cooling/Heating) | 54.5 (Quiet mode 51.5) |
| CONDITION | 1 m in front at height of 1.5 m |



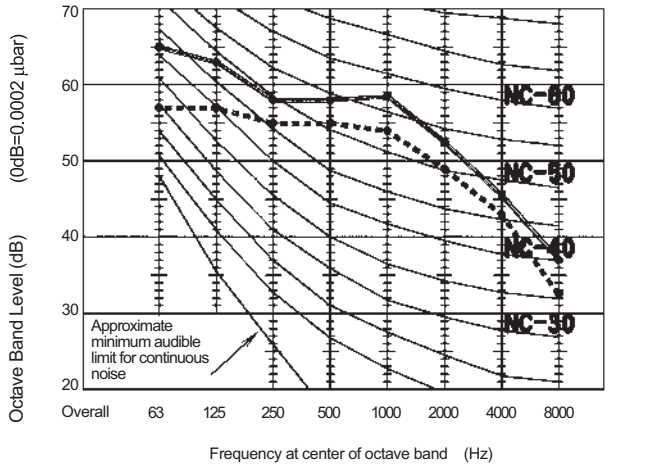

| MODEL | SPW-C0905DXHN8 |
|---|---|
| SOUND LEVEL dB(A) (Cooling/Heating) | 55.0 (Quiet mode 52.0) |
| CONDITION | 1 m in front at height of 1.5 m |



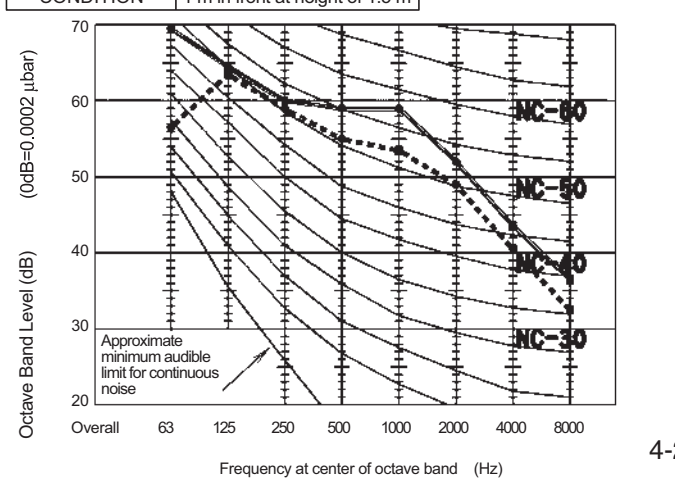

| MODEL | SPW-C1155DXHN8 |
|---|---|
| SOUND LEVEL dB(A) (Cooling/Heating) | 56.0 (Quiet mode 53.0) |
| CONDITION | 1 m in front at height of 1.5 m |




| MODEL | SPW-C1305DXHN8 |
|---|---|
| SOUND LEVEL dB(A) (Cooling/Heating) | 61.0 (Quiet mode 58.0) |
| CONDITION | 1 m in front at height of 1.5 m |




| MODEL | SPW-C1405DXHN8 |
|---|---|
| SOUND LEVEL dB(A) (Cooling/Heating) | 62.0 (Quiet mode 59.0) |
| CONDITION | 1 m in front at height of 1.5 m |




4

# 2. Indoor Unit

## 2-1. Specifications

### Unit Specifications

| MODEL NAME | | | | Heat Recovery with Direct-expansion Coil | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| MODEL No. | | | | SPW-GU055XH | | | | | |
| POWER SOURCE | | | | 220 - 230 - 240 V / single-phase / 50 Hz | | | | | |
| PERFORMANCE | | | | Cooling | | | Heating | | |
| Capacity | | Total | kW | 4.71 | | | 5.58 | | |
| | | Expansion Coil | kW | 2.8 | | | 3.2 | | |
| Total heat exchanger | | Enthalpy exchange efficiency | Summer(%) | 58 | | | | | |
| | | | Winter(%) | 66 | | | | | |
| | | Temperature exchange | % | 73 | | | | | |
| Air circulation (High at 230 V) | | | $M^3$ / h | 500 | | | | | |
| Moisture removal (High) | | | Liters / h | 2.2 | | | – | | |
| External Static Pressure | | Air Charge | Pa | 183 | | | | | |
| | | Air Discharge | Pa | 205 | | | | | |
| ELECTRICAL RATINGS | | | | | | | | | |
| Voltage rating | | | V | 220 | 230 | 240 | 220 | 230 | 240 |
| Available voltage range | | | V | 198 - 264 | | | 198 - 264 | | |
| Running amperes | | | A | 2.5 | 2.4 | 2.3 | 2.5 | 2.4 | 2.3 |
| Power input | | | kW | 0.532 | 0.532 | 0.532 | 0.532 | 0.532 | 0.532 |
| Power factor | | | % | 96 | 96 | 96 | 96 | 96 | 96 |
| Starting amperes | | | A | 8.2 | | | | | |
| FEATURES | | | | | | | | | |
| Heat exchanger | | | | Direct-Expansion Coil: Plate finned tube<br>Total heat exchanger: Static conversion | | | | | |
| Controls | | | | Microprocessor | | | | | |
| Fan speeds | | | | High, (Low*) | | | | | |
| Air filter | | Air Charge | | Long-life filter (Washable) | | | | | |
| | | Air Discharge | | Long-life filter (Washable) | | | | | |
| Refrigerant control | | | | Electronic Expansion Valve | | | | | |
| Operation sound | | | dB - A | 50 | | | | | |
| Refrigerant tubing connections | | | | Flare type | | | | | |
| Refrigerant tube diameter | | Liquid tube | mm (in.) | 6.35 (1/4) | | | | | |
| | | Gas tube | mm (in.) | 12.7 (1/2) | | | | | |
| Drain connection | | | | 25A (Connection port R1 screw) | | | | | |
| Drain pump | | | | – | | | | | |
| Duct connection port | | | mm | ø 250 × 4 | | | | | |
| Timer Remote Controller | | | | Optional (RCS-TM80BG) | | | | | |
| High performance filter | | | | Optional (65% colorimetric) | | | | | |
| Humidifier | | | | Optional (natural evaporating type) | | | | | |
| Supplied accessories | | | | External static pressure line switching connector,<br>Insulation, Clamper, Installation and Operating Manual. | | | | | |
| DIMENSIONS & WEIGHT | | | | | | | | | |
| Unit dimensions | | Height | mm | 425 | | | | | |
| | | Width | mm | 1,785 | | | | | |
| | | Depth | mm | 1,000 | | | | | |
| Net weight | | | kg | 155 | | | | | |

Rated conditions

- (Low*): When the supplied external static pressure line switching connector is connected.
- The numerical value within the parenthesis of fresh air conditioning load throughput is value of the heat recovery amount due to total heat exchange.
- As for the Direct-Expansion Coil efficiency, when it is run under the test conditions stated below
  Cooling: Direct-Expansion Coil port temperature 27 °C DB and 19 °C WB (discharge air), Outdoor air inlet temperature 35 °C DB and 24 °C WB (charge air).
  Heating: Direct-Expansion Coil port temperature 20 °C DB (discharge air), Outdoor air inlet temperature 7 °C DB and 6 °C WB (charge air)
- Efficiency of the total heat exchanger depends on the following conditions.
  Summer: Indoor temperature 27 °C DB & 20 °C WB (discharge air), Outdoor temperature 35 °C & DB 29 °C WB (charge air).
  Winter: Indoor temperature 20 °C DB & 14 °C WB (discharge air), Outdoor temperature 5 °C & DB 2 °C WB (charge air).
- The operation sound is measured when the unit is connected to the duct and operated in the anechoic room, associated with the value measurement directly 1.5m from under the unit.
  Once true installation effects taken into account, the actual levels will exceed the indicated values due to reflections off adjacent surfaces and peripheral noise.
- The changes of H/L of external static pressure depend on the plug equipped connector. However, it will not affect the remote control indication and will display the HIGH mark.
- This unit has no solvent resistance. Please pay attention to the installation site.

# 2. Indoor Unit

## Unit Specifications

| MODEL NAME | | | | Heat Recovery with Direct-expansion Coil | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| MODEL No. | | | | SPW-GU075XH | | | | | |
| POWER SOURCE | | | | 220 - 230 - 240 V / single-phase / 50 Hz | | | | | |
| PERFORMANCE | | | | Cooling | | | Heating | | |
| Capacity | Total | | kW | 7.46 | | | 8.79 | | |
| | Expansion Coil | | kW | 4.5 | | | 5.0 | | |
| Total heat exchanger | Enthalpy exchange efficiency | | Summer(%) | 58 | | | | | |
| | | | Winter(%) | 66 | | | | | |
| | Temperature exchange | | % | 73 | | | | | |
| Air circulation (High at 230 V) | | | $M^3$ / h | 750 | | | | | |
| Moisture removal (High) | | | Liters / h | 3.0 | | | – | | |
| External Static Pressure | Air Charge | | Pa | 221 | | | | | |
| | Air Discharge | | Pa | 264 | | | | | |
| ELECTRICAL RATINGS | | | | | | | | | |
| Voltage rating | | | V | 220 | 230 | 240 | 220 | 230 | 240 |
| Available voltage range | | | V | 198 - 264 | | | 198 - 264 | | |
| Running amperes | | | A | 3.4 | 3.2 | 3.1 | 3.4 | 3.2 | 3.1 |
| Power input | | | kW | 0.737 | 0.737 | 0.737 | 0.737 | 0.737 | 0.737 |
| Power factor | | | % | 99 | 99 | 99 | 99 | 99 | 99 |
| Starting amperes | | | A | 9.2 | | | | | |
| FEATURES | | | | | | | | | |
| Heat exchanger | | | | Direct-Expansion Coil: Plate finned tube<br>Total heat exchanger: Static conversion | | | | | |
| Controls | | | | Microprocessor | | | | | |
| Fan speeds | | | | High, (Low*) | | | | | |
| Air filter | Air Charge | | | Long-life filter (Washable) | | | | | |
| | Air Discharge | | | Long-life filter (Washable) | | | | | |
| Refrigerant control | | | | Electronic Expansion Valve | | | | | |
| Operation sound | | | dB - A | 51 | | | | | |
| Refrigerant tubing connections | | | | Flare type | | | | | |
| Refrigerant tube diameter | Liquid tube | | mm (in.) | 6.35 (1/4) | | | | | |
| | Gas tube | | mm (in.) | 12.7 (1/2) | | | | | |
| Drain connection | | | | 25A (Connection port R1 screw) | | | | | |
| Drain pump | | | | – | | | | | |
| Duct connection port | | | mm | ø 250 × 4 | | | | | |
| Timer Remote Controller | | | | Optional (RCS-TM80BG) | | | | | |
| High performance filter | | | | Optional (65% colorimetric) | | | | | |
| Humidifier | | | | Optional (natural evaporating type) | | | | | |
| Supplied accessories | | | | External static pressure line switching connector,<br>Insulation, Clamper, Installation and Operating Manual. | | | | | |
| DIMENSIONS & WEIGHT | | | | | | | | | |
| Unit dimensions | Height | | mm | 450 | | | | | |
| | Width | | mm | 1,903 | | | | | |
| | Depth | | mm | 1,120 | | | | | |
| Net weight | | | kg | 180 | | | | | |

Rated conditions

- (Low*): When the supplied external static pressure line switching connector is connected.
- The numerical value within the parenthesis of fresh air conditioning load throughput is value of the heat recovery amount due to total heat exchange.
- As for the Direct-Expansion Coil efficiency, when it is run under the test conditions stated below
  Cooling: Direct-Expansion Coil port temperature 27 °C DB and 19 °C WB (discharge air), Outdoor air inlet temperature 35 °C DB and 24 °C WB (charge air).
  Heating: Direct-Expansion Coil port temperature 20 °C DB (discharge air), Outdoor air inlet temperature 7 °C DB and 6 °C WB (charge air)
- Efficiency of the total heat exchanger depends on the following conditions.
  Summer: Indoor temperature 27 °C DB & 20 °C WB (discharge air), Outdoor temperature 35 °C & DB 29 °C WB (charge air).
  Winter: Indoor temperature 20 °C DB & 14 °C WB (discharge air), Outdoor temperature 5 °C & DB 2 °C WB (charge air).
- The operation sound is measured when the unit is connected to the duct and operated in the anechoic room, associated with the value measurement directly 1.5m from under the unit.
  Once true installation effects taken into account, the actual levels will exceed the indicated values due to reflections off adjacent surfaces and peripheral noise.
- The changes of H/L of external static pressure depend on the plug equipped connector. However, it will not affect the remote control indication and will display the HIGH mark.
- This unit has no solvent resistance. Please pay attention to the installation site.

# 2. Indoor Unit

## Unit Specifications

| MODEL NAME | | | | Heat Recovery with Direct-expansion Coil | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| MODEL No. | | | | SPW-GU105XH | | | | | |
| POWER SOURCE | | | | 220 - 230 - 240 V / single-phase / 50 Hz | | | | | |
| PERFORMANCE | | | | Cooling | | | Heating | | |
| Capacity | | Total | kW | 9.12 | | | 10.69 | | |
| | | Expansion Coil | kW | 5.6 | | | 6.3 | | |
| Total heat exchanger | | Enthalpy exchange efficiency | Summer(%) | 58 | | | | | |
| | | | Winter(%) | 66 | | | | | |
| | | Temperature exchange | % | 73 | | | | | |
| Air circulation (High at 230 V) | | | $M^3$ / h | 1,000 | | | | | |
| Moisture removal (High) | | | Liters / h | 3.0 | | | – | | |
| External Static Pressure | | Air Charge | Pa | 135 | | | | | |
| | | Air Discharge | Pa | 176 | | | | | |
| ELECTRICAL RATINGS | | | | | | | | | |
| Voltage rating | | | V | 220 | 230 | 240 | 220 | 230 | 240 |
| Available voltage range | | | V | 198 - 264 | | | 198 - 264 | | |
| Running amperes | | | A | 3.7 | 3.5 | 3.4 | 3.7 | 3.5 | 3.4 |
| Power input | | | kW | 0.798 | 0.798 | 0.798 | 0.798 | 0.798 | 0.798 |
| Power factor | | | % | 99 | 99 | 99 | 99 | 99 | 99 |
| Starting amperes | | | A | 9.2 | | | | | |
| FEATURES | | | | | | | | | |
| Heat exchanger | | | | Direct-Expansion Coil: Plate finned tube<br>Total heat exchanger: Static conversion | | | | | |
| Controls | | | | Microprocessor | | | | | |
| Fan speeds | | | | High, (Low*) | | | | | |
| Air filter | | Air Charge | | Long-life filter (Washable) | | | | | |
| | | Air Discharge | | Long-life filter (Washable) | | | | | |
| Refrigerant control | | | | Electronic Expansion Valve | | | | | |
| Operation sound | | | dB - A | 52 | | | | | |
| Refrigerant tubing connections | | | | Flare type | | | | | |
| Refrigerant tube diameter | | Liquid tube | mm (in.) | 6.35 (1/4) | | | | | |
| | | Gas tube | mm (in.) | 12.7 (1/2) | | | | | |
| Drain connection | | | | 25A (Connection port R1 screw) | | | | | |
| Drain pump | | | | – | | | | | |
| Duct connection port | | | mm | ø 300 × 4 | | | | | |
| Timer Remote Controller | | | | Optional (RCS-TM80BG) | | | | | |
| High performance filter | | | | Optional (65% colorimetric) | | | | | |
| Humidifier | | | | Optional (natural evaporating type) | | | | | |
| Supplied accessories | | | | External static pressure line switching connector,<br>Insulation, Clamper, Installation and Operating Manual. | | | | | |
| DIMENSIONS & WEIGHT | | | | | | | | | |
| Unit dimensions | | Height | mm | 450 | | | | | |
| | | Width | mm | 1,903 | | | | | |
| | | Depth | mm | 1,220 | | | | | |
| Net weight | | | kg | 200 | | | | | |

Rated conditions

- (Low*): When the supplied external static pressure line switching connector is connected.
- The numerical value within the parenthesis of fresh air conditioning load throughput is value of the heat recovery amount due to total heat exchange.
- As for the Direct-Expansion Coil efficiency, when it is run under the test conditions stated below
  Cooling: Direct-Expansion Coil port temperature 27 °C DB and 19 °C WB (discharge air), Outdoor air inlet temperature 35 °C DB and 24 °C WB (charge air).
  Heating: Direct-Expansion Coil port temperature 20 °C DB (discharge air), Outdoor air inlet temperature 7 °C DB and 6 °C WB (charge air)
- Efficiency of the total heat exchanger depends on the following conditions.
  Summer: Indoor temperature 27 °C DB & 20 °C WB (discharge air), Outdoor temperature 35 °C & DB 29 °C WB (charge air).
  Winter: Indoor temperature 20 °C DB & 14 °C WB (discharge air), Outdoor temperature 5 °C & DB 2 °C WB (charge air).
- The operation sound is measured when the unit is connected to the duct and operated in the anechoic room, associated with the value measurement directly 1.5m from under the unit.
  Once true installation effects taken into account, the actual levels will exceed the indicated values due to reflections off adjacent surfaces and peripheral noise.
- The changes of H/L of external static pressure depend on the plug equipped connector. However, it will not affect the remote control indication and will display the HIGH mark.
- This unit has no solvent resistance. Please pay attention to the installation site.

# 2. Indoor Unit

## 2-2. Control specifications

### Unit specifications

| MICROCOMPUTER CONTROL | | | | |
|---|---|---|---|---|
| Thermal modulation | Preset temperature range | Cooling | | 18 °C – 30 °C |
| | | Heating | | 16 °C – 30 °C |
| | | Auto | | 17 °C – 30 °C |
| | Transpiration temperature control preset value | Cooling | | 12 °C |
| | | Heating | | 40 °C |
| Setting | Mode change | | | Auto (*1), Heating, Cooling |
| | Fan speed | | | Constant |
| | Timer | | | OFF, ON, OFF Repeat |
| Alarm display (*2) | Serial communication errors or setting errors | | | E** |
| | Unregistered settings or setting errors | | | L** |
| | Safety device errors | | | P** |
| | Thermistor trouble, etc. | | | F** |
| | Compressor cover | | | H** |
| Heating Preparation | Indoor fan speed control | | | When the indoor heat exchanger temperature is below 28 °C, below 25 °C is rated wind velocity and below 1 °C the wind stops. (Max. length of 6 min.) |
| Defrosting | Please refer to the service technical data of combined outdoor units. | | | |
| Service functions | Temperature sensor indicator function | | | All temperature sensors are call ready. |
| | Service check (archival record) indicator function | | | Records up to 4 service checks in the order of the occurrence. |
| System Control | 2 remote-controls | | | 2 remote-controls connected (One as a main remote-control, and one as secondary remote-control.) |
| | Group-control | | | Up to 8 units can be operated at once. |
| Other | Test run（Forced thermo ON） | | | Room temperature settings are bypassed with forced operation. |

Rated conditions

* 1. Only when all indoor units have an identical refrigerant system inside and the units are in the same group control system.

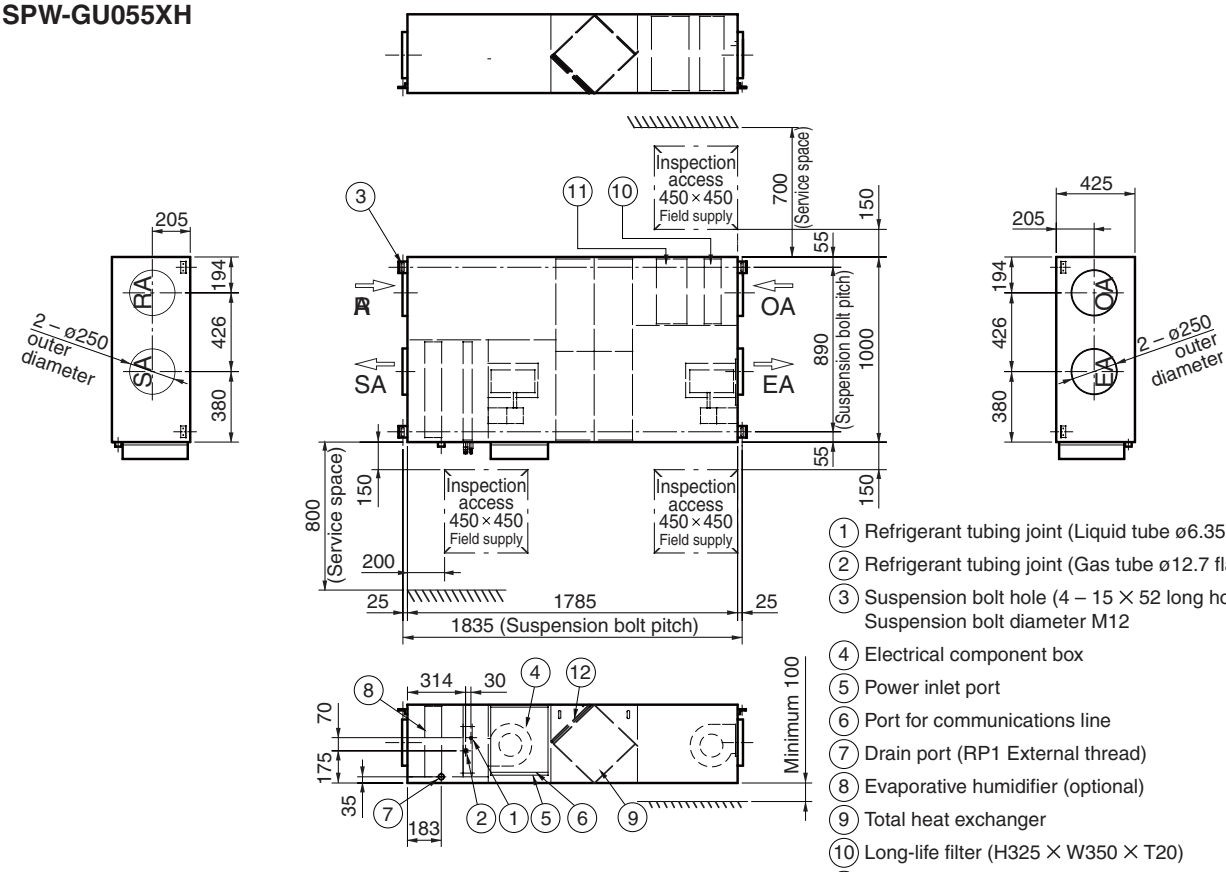
* 2. Please refer to the “Meaning of Alarm Messages” in section 5.

4

# 2. Indoor Unit

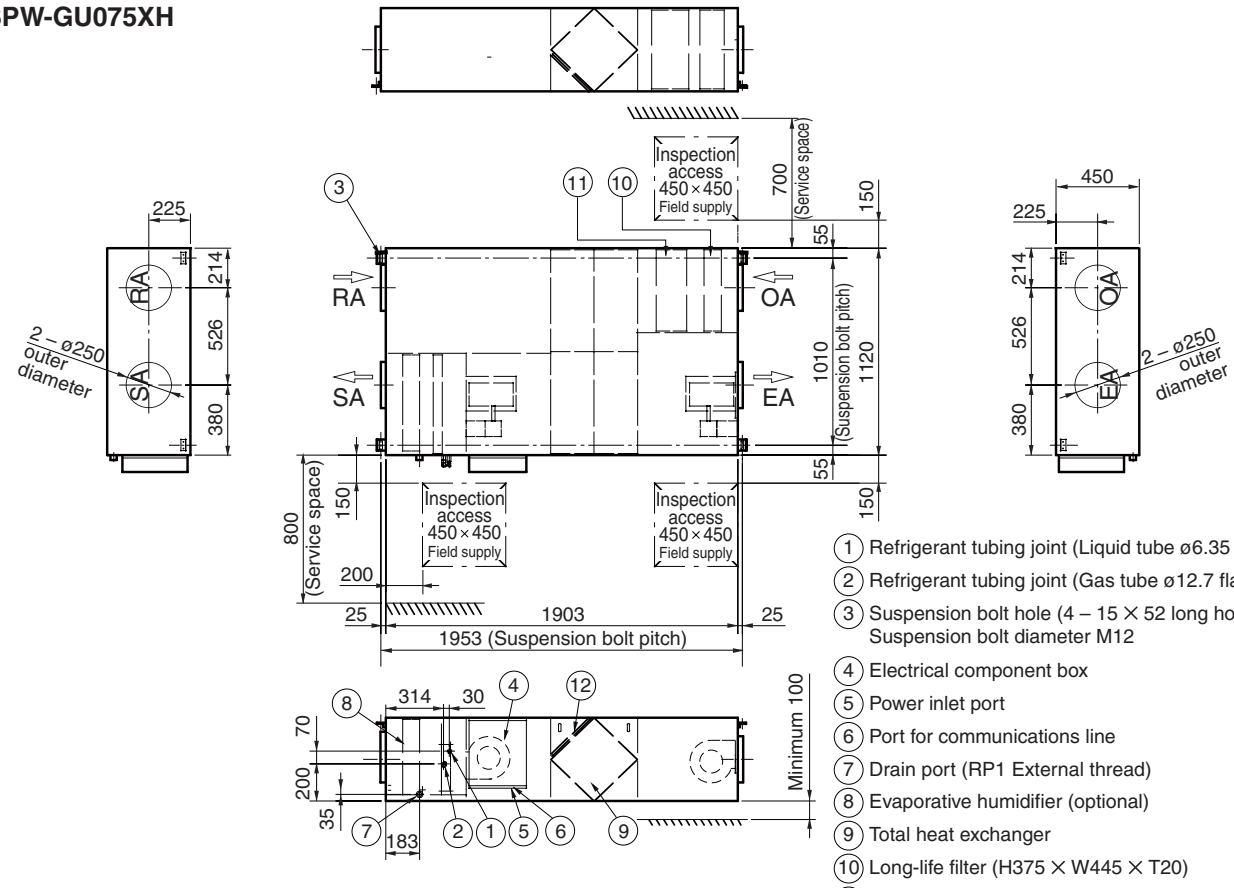
## 2-3. Dimensional Data

### SPW-GU055XH




1. Refrigerant tubing joint (Liquid tube ø6.35 flare)
2. Refrigerant tubing joint (Gas tube ø12.7 flare)
3. Suspension bolt hole (4 – 15 × 52 long hole) Suspension bolt diameter M12
4. Electrical component box
5. Power inlet port
6. Port for communications line
7. Drain port (RP1 External thread)
8. Evaporative humidifier (optional)
9. Total heat exchanger
10. Long-life filter (H325 × W350 × T20)
11. High-performance filter (optional)
12. Air filter (H230 × W480 × T10. Two filters are used.)

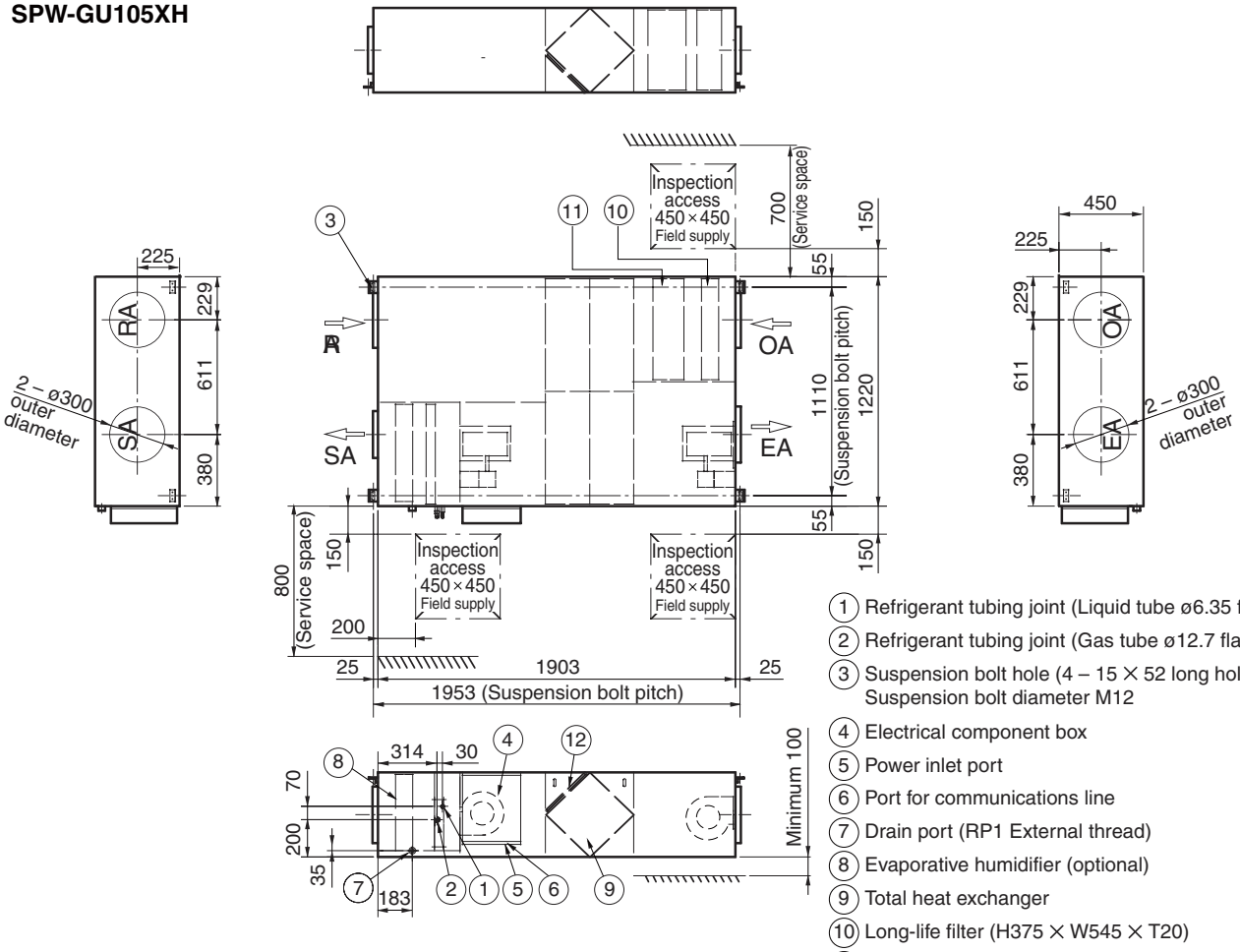
### SPW-GU075XH




1. Refrigerant tubing joint (Liquid tube ø6.35 flare)
2. Refrigerant tubing joint (Gas tube ø12.7 flare)
3. Suspension bolt hole (4 – 15 × 52 long hole) Suspension bolt diameter M12
4. Electrical component box
5. Power inlet port
6. Port for communications line
7. Drain port (RP1 External thread)
8. Evaporative humidifier (optional)
9. Total heat exchanger
10. Long-life filter (H375 × W445 × T20)
11. High-performance filter (optional)
12. Air filter (H247 × W547 × T10. Two filters are used.)

## 2. Indoor Unit

**SPW-GU105XH**



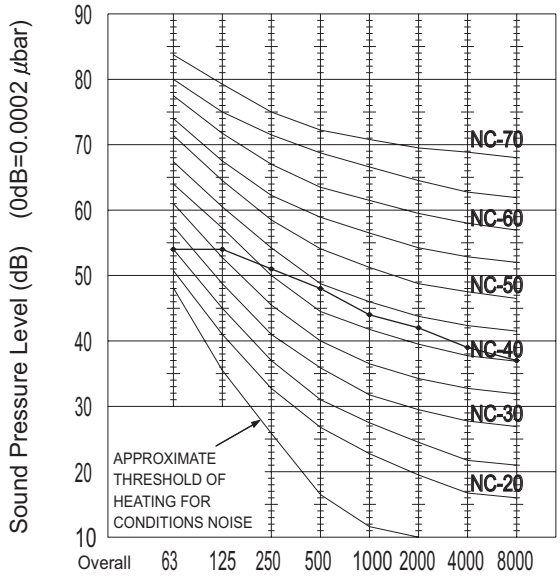

(1) Refrigerant tubing joint (Liquid tube ø6.35 flare)
(2) Refrigerant tubing joint (Gas tube ø12.7 flare)
(3) Suspension bolt hole (4 – 15 × 52 long hole)
Suspension bolt diameter M12
(4) Electrical component box
(5) Power inlet port
(6) Port for communications line
(7) Drain port (RP1 External thread)
(8) Evaporative humidifier (optional)
(9) Total heat exchanger
(10) Long-life filter (H375 × W545 × T20)
(11) High-performance filter (optional)
(12) Air filter (H247 × W597 × T10. Two filters are used.)

4

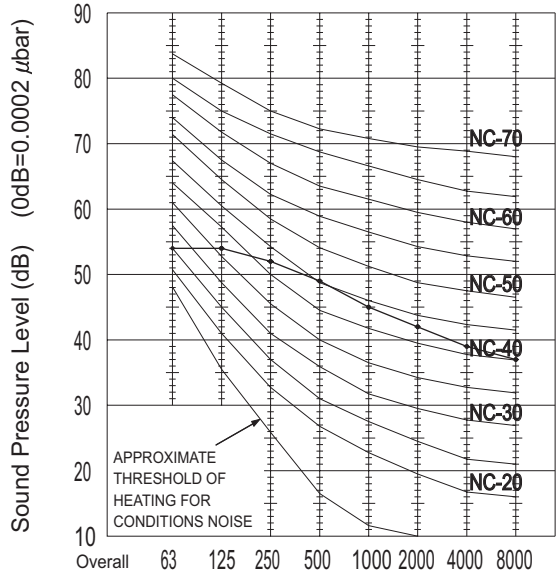
# 2. Indoor Unit

### 2-4 Noise Criterion Curves

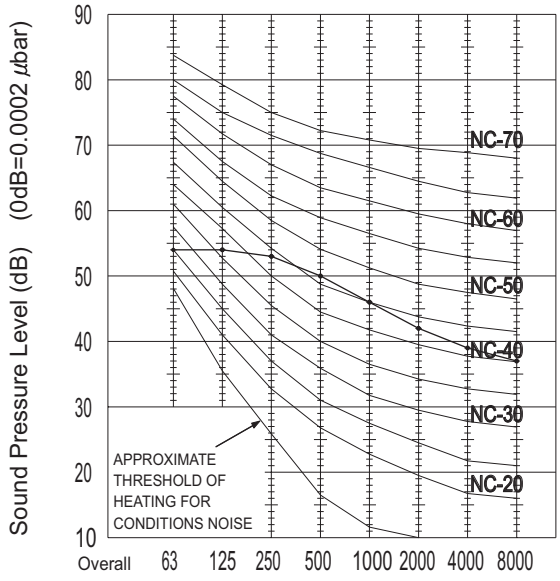
| MODEL | SPW-GU055XH |
|---|---|
| SOUND LEVEL | 50dB(A) |
| CONDITION | Under the unit 1.5 m |




| MODEL | SPW-GU075XH |
|---|---|
| SOUND LEVEL | 51dB(A) |
| CONDITION | Under the unit 1.5 m |




| MODEL | SPW-GU105XH |
|---|---|
| SOUND LEVEL | 52dB(A) |
| CONDITION | Under the unit 1.5 m |




4

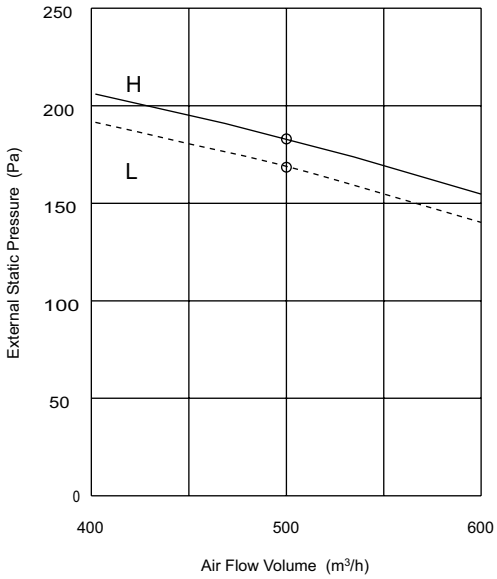
### 2-5. Fan Performance

#### How to Read the Diagram

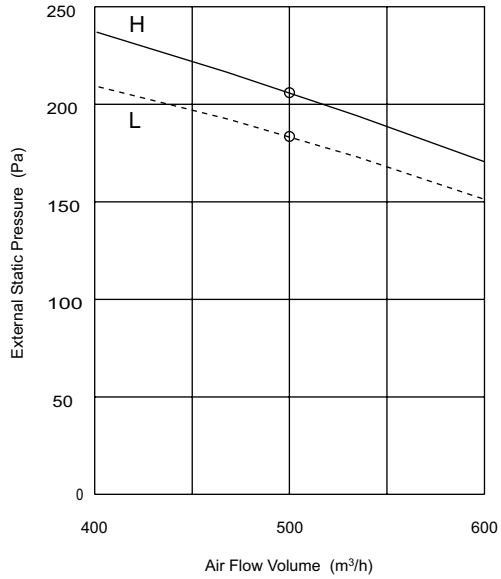
The vertical axis is the EXTERNAL STATIC PRESSURE (Pa) while the horizontal axis represents the AIR FLOW ($m^3$/h). The characteristic curve for the "H" and "L" fan speed control are shown. The name plate values are shown based of the "H" air flow. Therefore in the case of the SPW-GU055XH the flow is 500 $m^3$/h, while the EXTERNAL STATIC PRESSURE is 183 Pa at "H" position (Air charge side). If the external static pressure is too low (due to short duct), the air flow volume may be too great at each air outlet. To set the fan speed control to "L" position, use the supplied external static pressure line switching connector. (Refer next page)

SPW-GU055XH

Air charge

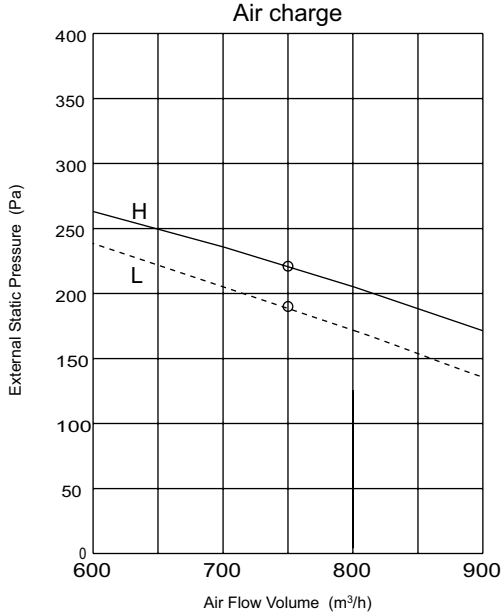



Air discharge

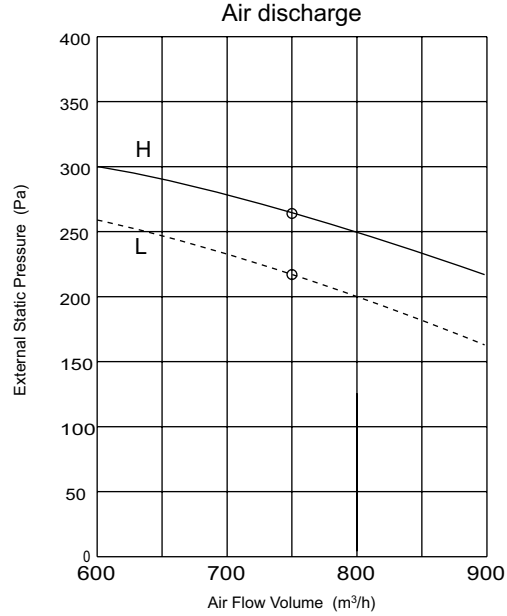



SPW-GU075XH

Air charge



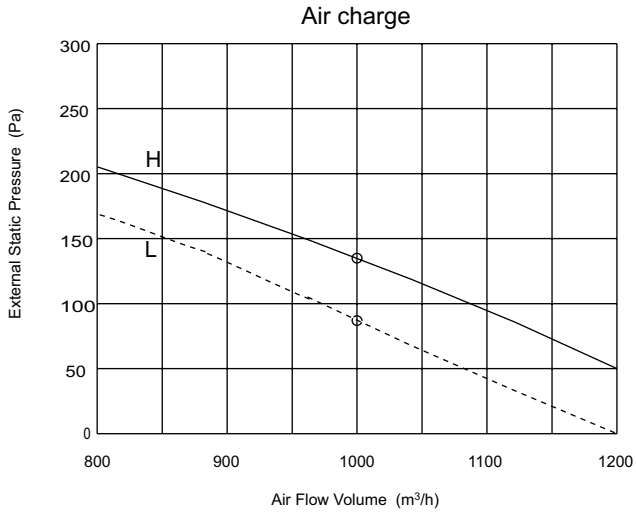

Air discharge

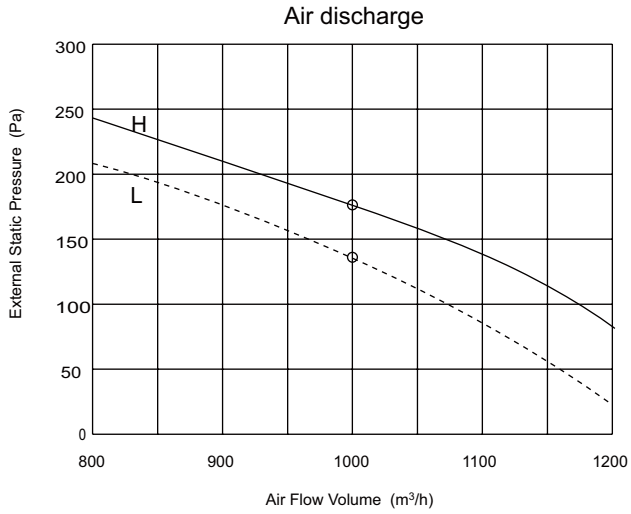


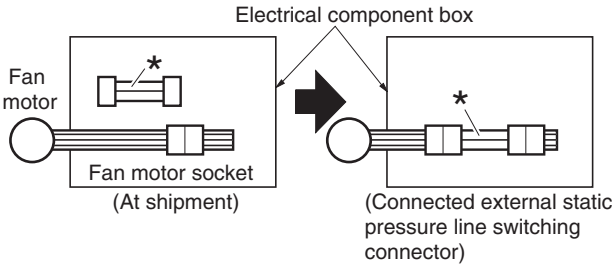

4

## 2. Indoor Unit

SPW-GU105XH




* External static pressure line switching connector

4

## Contents

# 5. TEST RUN

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# 1. Preparing for Test Run

## Preparing for Test Run

- Before attempting to start the air conditioner, check the following.

(1) All loose matter is removed from the cabinet especially steel filings, bits of wire, and clips.

(2) The control wiring is correctly connected and all electrical connections are tight.

(3) The protective spacers for the compressor used for transportation have been removed. If not, remove them now.

(4) The transportation pads for the indoor fan have been removed. If not, remove them now.

(5) The power has been connected to the unit for at least 5 hours before starting the compressor. The bottom of the compressor should be warm to the touch and the crankcase heater around the feet of the compressor should be hot to the touch.
(Fig. 5-1)

(6) Both the gas and liquid tube service valves are open. If not, open them now. (Fig. 5-2)

(7) Request that the customer be present for the trial run. Explain the contents of the instruction manual, then have the customer actually operate the system.

(8) Be sure to give the instruction manual and warranty certificate to the customer.

(9) When replacing the control PCB, be sure to make all the same settings on the new PCB as were in use before replacement.

The existing EEP ROM is not changed, and is connected to the new control PCB.

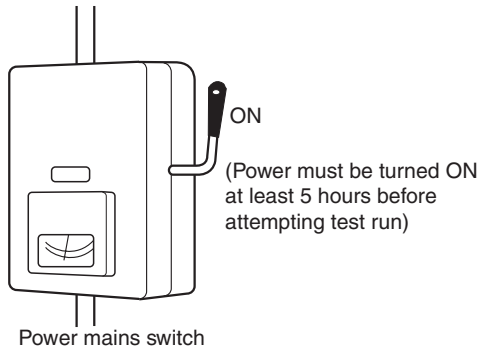



**Fig. 5-1**

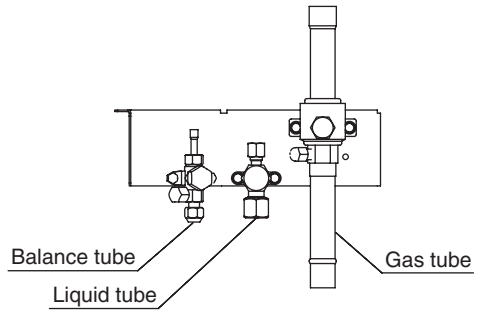



**Fig. 5-2**

5

# 2. Test Run Procedure

## Test Run Procedure

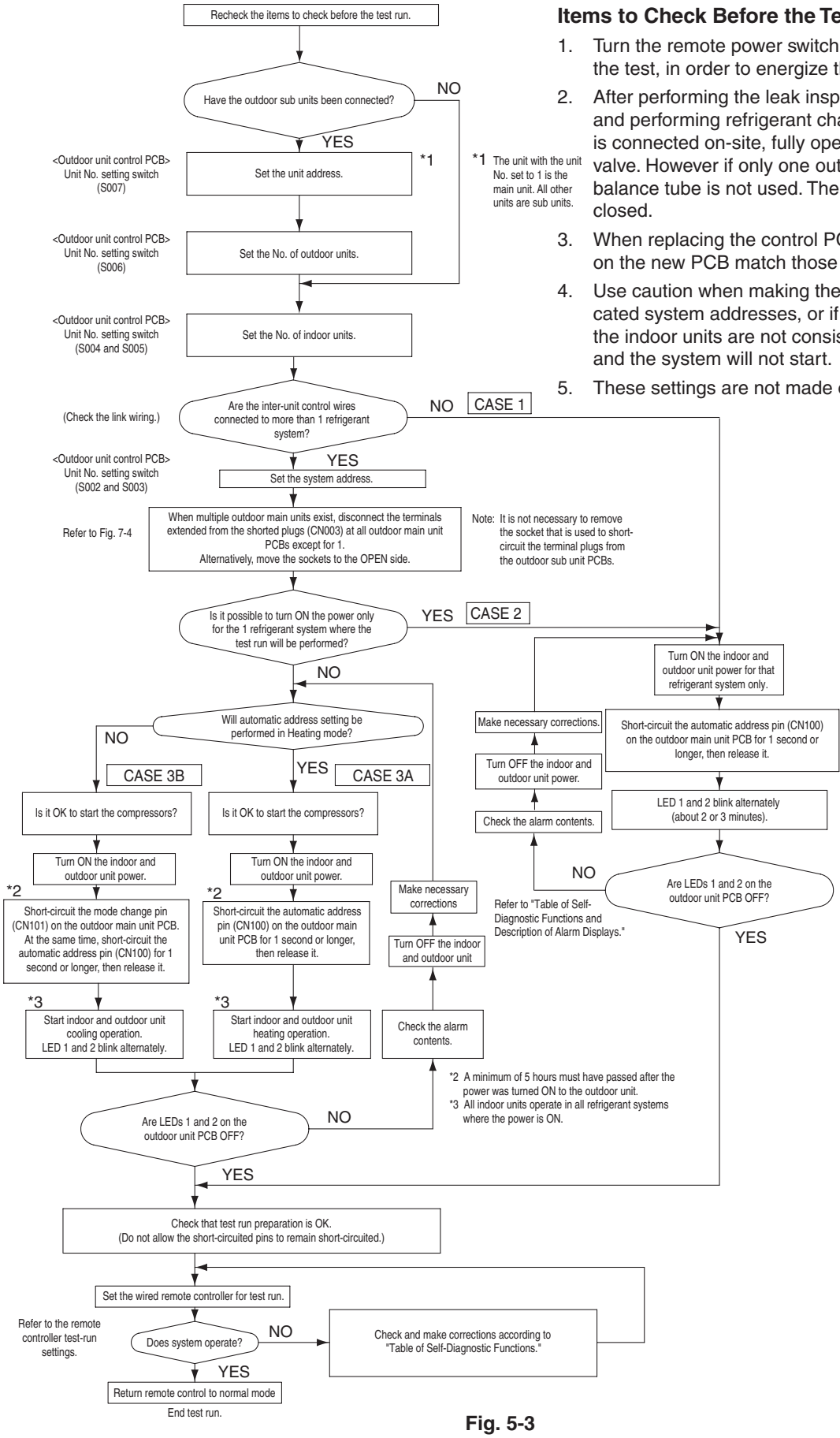



**Fig. 5-3**

### Items to Check Before the Test Run

1. Turn the remote power switch on at least 5 hours before the test, in order to energize the crank case heater.
2. After performing the leak inspection, applying vacuum, and performing refrigerant charge for the tubing which is connected on-site, fully open the outdoor unit service valve. However if only one outdoor unit is installed, a balance tube is not used. Therefore, leave the valve fully closed.
3. When replacing the control PCB, be sure that the settings on the new PCB match those on the old PCB.
4. Use caution when making the settings. If there are duplicated system addresses, or if the settings for the Nos. of the indoor units are not consistent, an alarm will occur and the system will not start.
5. These settings are not made on the indoor unit PCB.

# 3. Main Outdoor Unit PCB Setting

## Main Outdoor Unit PCB Setting

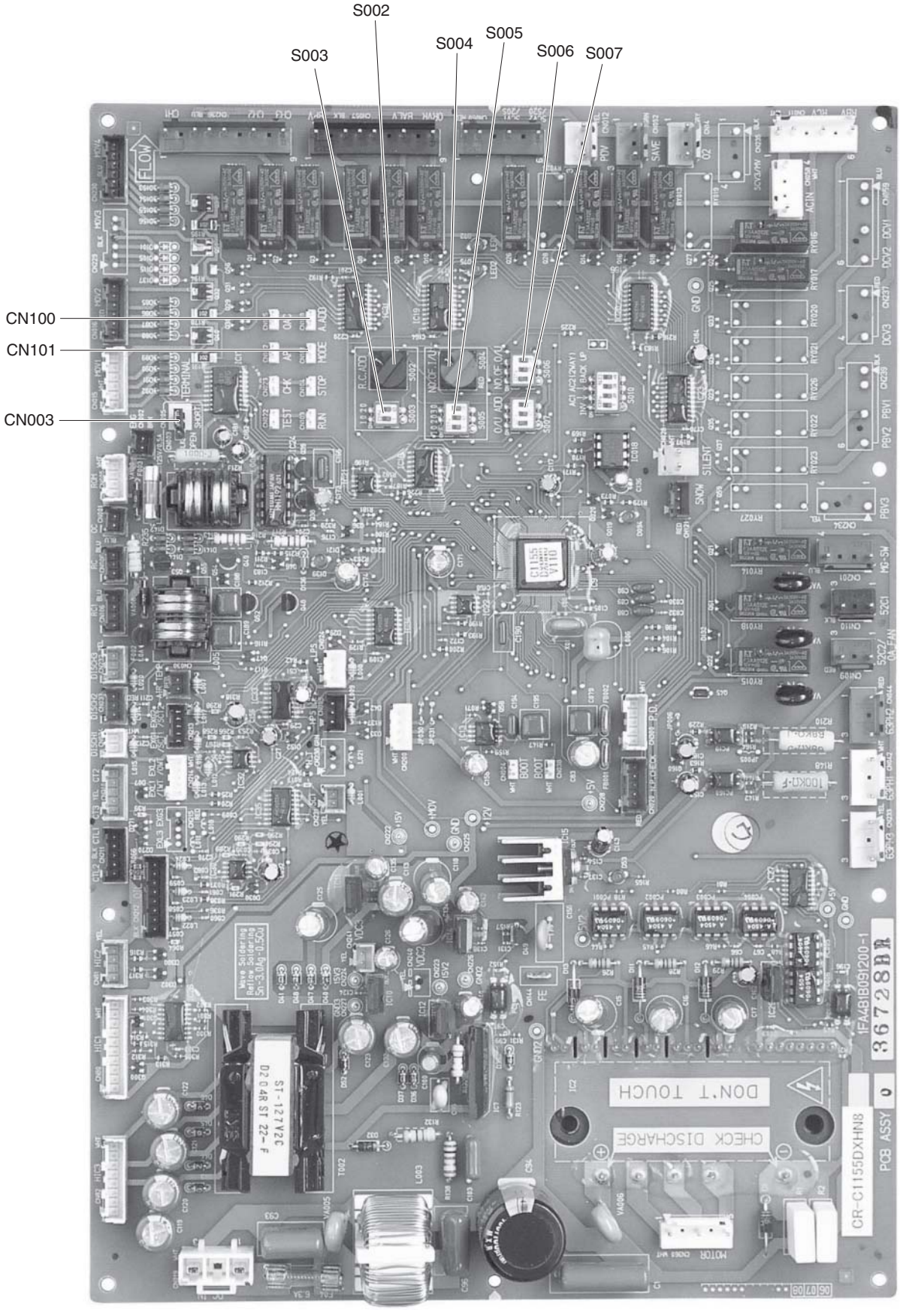


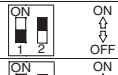
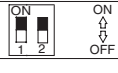

**Fig. 5-4**

# 3. Main Outdoor Unit PCB Setting

● Examples of the No. of indoor units settings (S005, S004)

| No. of indoor units | Indoor unit setting (S005) (3P DIP switch, blue) 10 20 30 | Indoor unit setting (S004) (Rotary switch, red) |
|---|---|---|
| 1 unit (factory setting) | All OFF | Set to 1 |
| 11 units | 1 ON | Set to 1 |
| 21 units | 2 ON | Set to 1 |
| 31 units | 3 ON | Set to 1 |
| 40 units | 1 & 3 ON | Set to 0 |

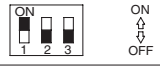
● Examples of refrigerant circuit (R.C.) address settings (required when link wiring is used) (S003, S002)

| System address No. | System address (S003) (2P DIP switch, blue) 10 20 | System address (S002) (Rotary switch, black) |
|---|---|---|
| System 1 (factory setting) | Both OFF | Set to 1 |
| System 11 | 1 ON | Set to 1 |
| System 21 | 2 ON  | Set to 1 |
| System 30 | 1 & 2 ON  | Set to 0 |

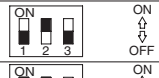
● Examples of the No. of outdoor units settings (S006)

| No. of outdoor units | Outdoor unit setting (S006) (3P DIP switch, blue) |
|---|---|
| 1 unit (factory setting) | 1 ON |
| 2 units | 2 ON |
| 3 units | 1 & 2 ON |

● Address setting of main outdoor unit (S007)

| Unit No. setting | Address setting of outdoor unit (S007) (3P DIP switch, blue) |
|---|---|
| Unit No. 1 (main unit) (factory setting) |  |

● Address setting of sub outdoor unit

| Unit No. setting | Address setting of outdoor unit (S007) (3P DIP switch, blue) |
|---|---|
| Unit No. 2 (sub unit) (factory setting) | 2 ON  |
| Unit No. 3 (sub unit) | 1 & 2 ON |

The sub unit control PCB contains the same switches as the main unit control PCB for No. of indoor units, No. of outdoor units, and system address. However it is not necessary to set these switches.

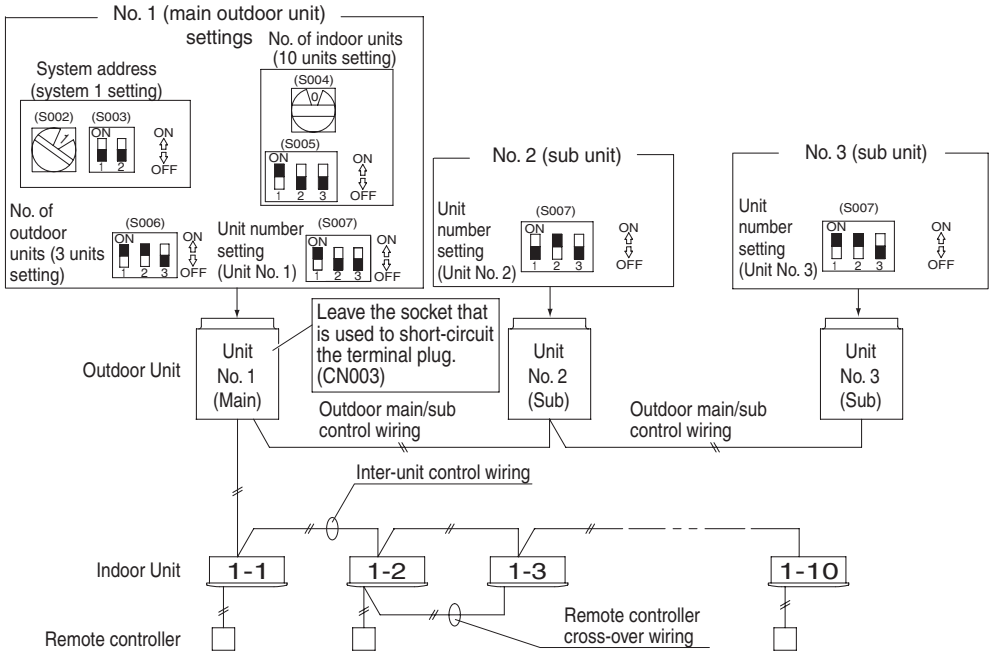
5

# 4. Auto Address Setting

## Auto Address Setting

### Basic wiring diagram: Example (1)

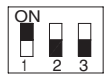
- **If link wiring is not used**
  **(The inter-unit control wires are not connected to multiple refrigerant systems.)**
  Indoor unit addresses can be set without operating the compressors.

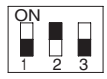



Case 1

**Fig. 5-5**

**(1) Automatic Address Setting from the Outdoor Unit**

1. To set the number of outdoor units, on the outdoor main unit control PCB set the No. of outdoor units DIP switch (S006) to (3 units), and set the unit No. DIP switch (S007) to  (unit No. 1 - main outdoor unit).

2. On the No. 2 (sub) unit control PCB, set the unit No. switch (S007) to  (unit No. 2).

   On the No. 3 (sub) unit control PCB, set the unit No. switch (S007) to (unit No. 3).

3. On the outdoor main unit control PCB, check that the system address rotary switch (S002) is set to "1" and that the DIP switch (S003) is set to "0." (These are the settings at the time of factory shipment.)

4. To set the number of indoor units that are connected to the outdoor unit to 10, on the outdoor main unit control PCB set the No. of indoor units DIP switch (S005) to "1." and set the rotary switch (S004) to "0."

5. Turn ON the power to the indoor and outdoor units.

6. On the outdoor main unit control PCB, short-circuit the automatic address pin (CN100) for 1 second or longer, then release it.

   ↓

   (Communication for automatic address setting begins.)

   ↓ * To cancel, again short-circuit the automatic address pin (CN100) for 1 second or longer, then release it. The LED that indicates that automatic address setting is in progress turns OFF and the process is stopped. Be sure to perform automatic address setting again.

   (Automatic address setting is completed when LEDs 1 and 2 on the outdoor main unit control PCB turn OFF.)

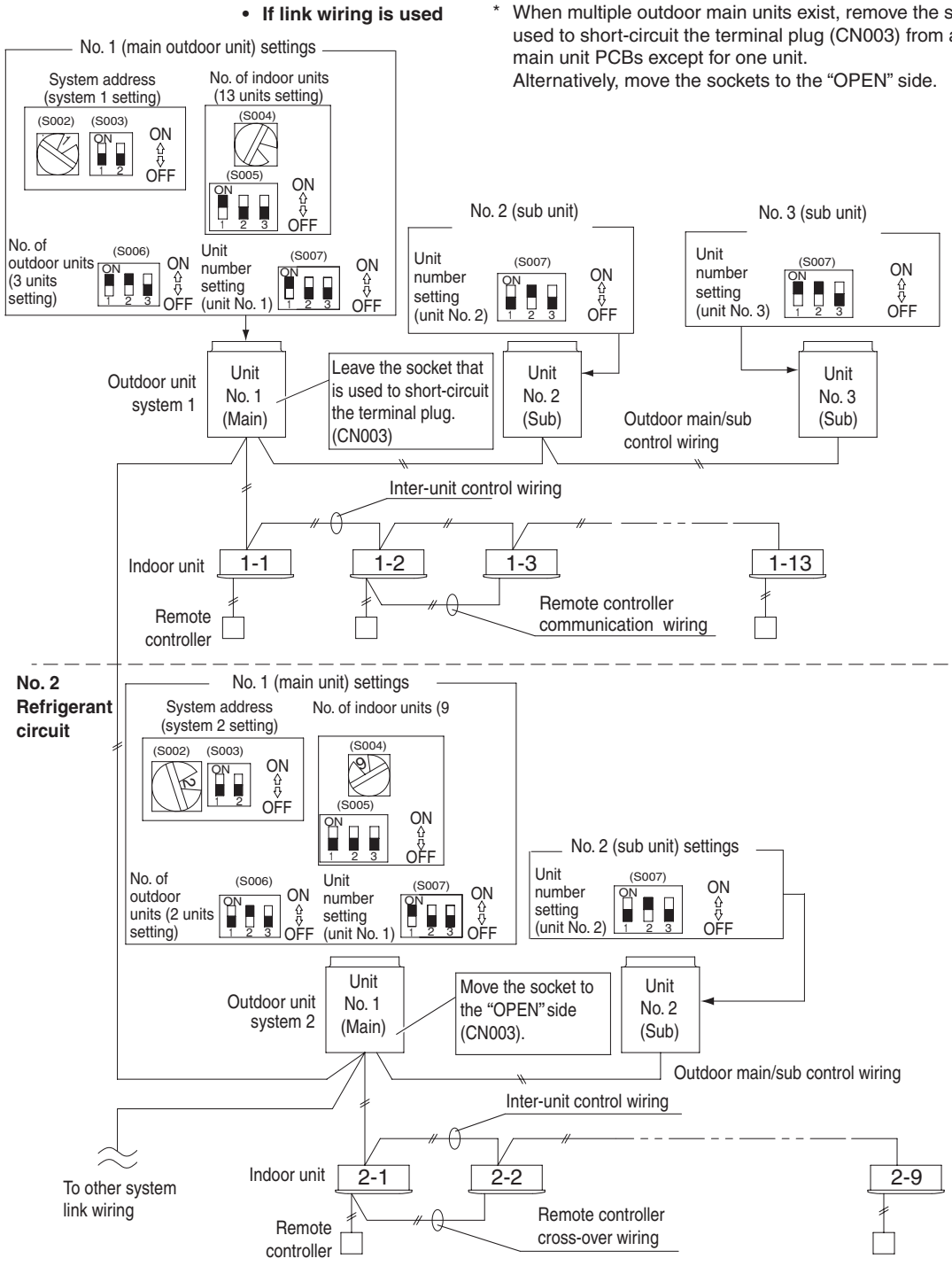
   ↓

7. Operation from the remote controllers is now possible.
   * To perform automatic address setting from the remote controller, perform steps 1 to 5, then use the remote controller and complete automatic address setting.

● Refer to "Automatic Address Setting from the Remote Controller."

# 4. Auto Address Setting

## Basic wiring diagram: Example (2)




* When multiple outdoor main units exist, remove the socket that is used to short-circuit the terminal plug (CN003) from all outdoor main unit PCBs except for one unit.
Alternatively, move the sockets to the "OPEN" side.

Make settings as appropriate for the cases listed below.
(Refer to the instructions on the following pages.)

- **Indoor and outdoor unit power can be turned ON for each system separately.** → Case 2
- **Indoor and outdoor unit power cannot be turned ON for each system separately.**
  - Automatic address setting in Heating mode → Case 3A
  - Automatic address setting in Cooling mode → Case 3B

**Fig. 5-6**

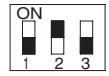
# 4. Auto Address Setting

Case 2 **Automatic Address Setting (no compressor operation)**

- Indoor and outdoor unit power can be turned ON for each system separately.
  Indoor unit addresses can be set without operating the compressors.

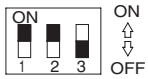
**Automatic Address Setting from Outdoor Unit**

1. On the No. 1 (main) unit control PCB, set the unit No. switch (S007) to

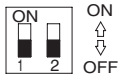
(unit No. 1).
   On the No. 2 (sub) unit control PCB, set the unit No. switch (S007) to 

(unit No. 2).
   On the No. 3 (sub) unit control PCB, set the unit No. switch (S007) to

(unit No. 3).

2. To set the number of outdoor units on the outdoor main unit control PCB, set the No. of outdoor units DIP switch (S006) to 

(3 units).

3. On the outdoor main unit control PCB, check that the system address rotary switch (S002) is set to “1” and that the DIP switch (S003) is set to “0” 

. (These are the settings at the time of factory shipment.)

4. To set the number of indoor units that are connected to the outdoor unit to 13, on the outdoor main unit control PCB set the No. of indoor units DIP switch (S005) to “1”

, and set the rotary switch (S004) to “3.”

5. Turn on power to all indoor and outdoor units in the system.

6. Short-circuit the automatic address pin at the outdoor main unit (CN100) for 1 second or longer, then release it.

   ↓

   (Communication for automatic address setting begins.)

   ↓ * To cancel, again short-circuit the automatic address pin (CN100) for 1 second or longer, then release it. The LED that indicates automatic address setting is in progress turns OFF and the process is stopped. Be sure to perform automatic address setting again.

   (Automatic address setting is completed when LEDs 1 and 2 on the outdoor main unit control PCB turn OFF.)

   ↓

7. Next turn the power ON only for the indoor and outdoor units of the next (different) system. Repeat steps 1 - 5 in the same way to complete automatic address settings for all systems.

   ↓

8. Operation from the remote controllers is now possible.
   * To perform automatic address setting from the remote controller, perform steps 1 - 5, then use the remote controller and complete automatic address setting.

- Refer to “Automatic Address Setting from Remote Controller.”

# 4. Auto Address Setting

Case 3A **Automatic Address Setting in Heating Mode**

- Indoor and outdoor unit power cannot be turned ON for each system separately.
  In the following, automatic setting of indoor unit addresses is not possible if the compressors are not operating.
  Therefore perform this process only after completing all refrigerant tubing work.

**Automatic Address Setting from Outdoor Unit**

1. Perform steps 1 - 4 in the same way as for Case 2 .
5. Turn the indoor and outdoor unit power ON at all systems.

↓

6. To perform automatic address setting in Heating mode , on the outdoor main unit control PCB in the refrigerant system where you wish to set the addresses, short-circuit the automatic address pin (CN100) for 1 second or longer, then release it. (Be sure to perform this process for one system at a time. Automatic address settings cannot be performed for more than one system at the same time.)

   ↓

   (Communication for automatic address setting begins, the compressors turn **ON, and automatic address setting in Heating mode begins.)**
   (All indoor units operate.)

   ↓

   * To cancel, again short-circuit the automatic address pin (CN100) for 1 second or longer, then release it. The LED that indicates automatic address setting is in progress turns OFF and the process is stopped. Be sure to perform automatic address setting again.

   (Automatic address setting is completed when the compressors stop and LEDs 1 and 2 on the main unit control PCB turn OFF.)

   ↓

7. At the outdoor main unit in the next (different) system, short-circuit the automatic address pin (CN100) for 1 second or longer, then release it.

   ↓

   (Repeat the same steps to complete automatic address setting for all units.)

   ↓

8. Operation from the remote controllers is now possible.
   * To perform automatic address setting from the remote controller, perform steps 1 - 5, then use the remote controller and complete automatic address setting.

- Refer to “Automatic Address Setting from Remote Controller.”

5

# 4. Auto Address Setting

Case 3B **Automatic Address Setting in Cooling Mode**

- Indoor and outdoor unit power cannot be turned ON for each system separately. In the following, automatic setting of indoor unit addresses is not possible if the compressors are not operating. Therefore perform this process only after completing all refrigerant tubing work.
  Automatic address setting can be performed during Cooling operation.

**Automatic Address Setting from Outdoor Unit**

1. Perform steps 1 - 4 in the same way as for Case 2 .
5. Turn the indoor and outdoor unit power ON at all systems.

↓

6. To perform automatic address setting in Cooling mode , on the outdoor main unit control PCB in the refrigerant system where you wish to set the addresses, short-circuit the mode change 2P pin (CN101). At the same time, short-circuit the automatic address pin (CN100) for 1 second or longer, then release it. (Be sure to perform this process for one system at a time. Automatic address settings cannot be performed for more than one system at the same time.)

   ↓

   (Communication for automatic address setting begins, the compressors turn **ON, and automatic address setting in Cooling mode begins.)**
   (All indoor units operate.)

   ↓ * To cancel, again short-circuit the automatic address pin (CN100) for 1 second or longer, then release it. The LED that indicates automatic address setting is in progress turns OFF and the process is stopped. Be sure to perform automatic address setting again.

   (Automatic address setting is completed when the compressors stop and LEDs 1 and 2 on the outdoor main unit control PCB turn OFF.)

   ↓

7. At the outdoor main unit in the next (different) system, short-circuit the automatic address pin (CN100) for 1 second or longer, then release it.

   ↓

   (Repeat the same steps to complete automatic address setting for all units.)

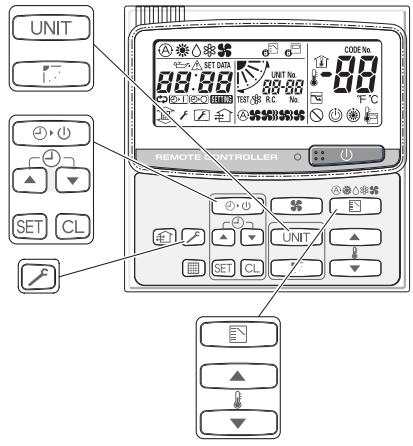
   ↓

8. Operation from the remote controllers is now possible.
   * Automatic address setting in Cooling mode cannot be done from the remote controller.

### Automatic Address Setting* from the Remote Controller

Selecting each refrigerant system individually for automatic address setting

---Automatic address setting for each system: Item code “A1.”




1. Press the remote controller timer time ▲ button and 🔧 button at the same time. (Press and hold for 4 seconds or longer.)
2. Next, press either the temperature setting ▲ or ▼ button. (Check that the item code is “A1.”)
3. Use either the UNIT or button to set the system No. to perform automatic address setting.
4. Then press the SET button.

   (Automatic address setting for one refrigerant system begins.)

   (When automatic address setting for one system is completed, the system returns to normal stopped status.) <Approximately 4 - 5 minutes is required.>

   (During automatic address setting, “NOW SETTING” is displayed on the remote controller. This message disappears when automatic address setting is completed.)
5. Repeat the same steps to perform automatic address setting for each successive system.

5

# 4. Auto Address Setting

### Display during automatic address setting

- On outdoor main unit PCB

LED 2 1

Blink alternately

* Do not short-circuit the automatic address setting pin (CN100) again while automatic address setting is in progress. Doing so will cancel the setting operation and will cause LEDs 1 and 2 to turn OFF.

* When automatic address setting has been successfully completed, both LEDs 1 and 2 turn OFF.

* LED 1 is D72. LED 2 is D75.

* If automatic address setting is not completed successfully, refer to the table below and correct the problem. Then perform automatic address setting again.

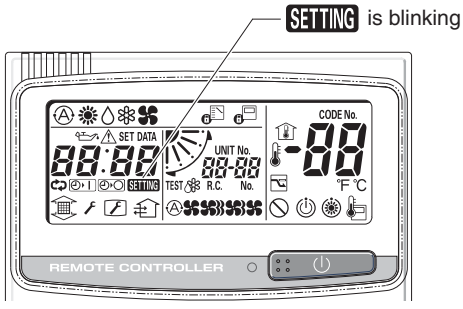
- Display of LEDs 1 and 2 on the outdoor unit control PCB

(☼: ON ✷ : Blinking ● :OFF)

| LED1 | LED2 | Display meaning |
|---|---|---|
| ☼ | ☼ | After the power is turned ON (and automatic address setting is not in progress), no communication with the indoor units in that system is possible. |
| ● | ☼ | After the power is turned ON (and automatic address setting is not in progress), 1 or more indoor units are confirmed in that system; however, the number of indoor units does not match the number that was set. |
| ✷ | ✷ | Automatic address setting is in progress. |
| Alternating | | |
| ● | ● | Automatic address setting completed. |
| ✷ | ✷ | At time of automatic address setting, the number of indoor units did not match the number that was set. "⚠"(when indoor units are operating) indication appears on the display. |
| Simultaneous | | |
| ✷ | ✷ | Refer to "Table of Self-Diagnostic Functions and Description of Alarm Displays." |
| Alternating | | |

**Note**: "⚠" indicates that the solenoid is fused or that there is a CT detection current failure (current is detected when the compressor is OFF).

- Remote controller display




5

# 4. Auto Address Setting

**Request concerning recording the indoor/outdoor unit combination Nos.**

After automatic address setting has been completed, be sure to record them for future reference.

List the outdoor main unit system address and the addresses of the indoor units in that system in an easily visible location (next to the nameplate), using a permanent marking pen or similar means that cannot be abraded easily.

Example: (Outdoor) 1 - (Indoor) 1-1, 1-2, 1-3… (Outdoor) 2 - (Indoor) 2-1, 2-2, 2-3…

These numbers are necessary for later maintenance. Please be sure to indicate them.

**Checking the indoor unit addresses**

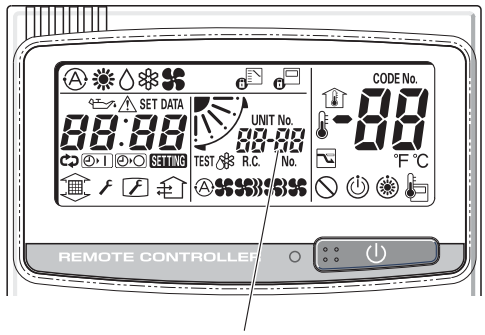
Use the remote controller to check the indoor unit address.

**<If 1 indoor unit is connected to 1 remote controller>**

1. Press and hold the button and button for 4 seconds or longer (simple settings mode).
2. The address is displayed for the indoor unit that is connected to the remote controller.
   (Only the address of the indoor unit that is connected to the remote controller can be checked.)
3. Press the button again to return to normal remote controller mode.

**<If multiple indoor units are connected to 1 remote controller (group control)>**

1. Press and hold the button and button for 4 seconds or longer (simple settings mode).
2. “ALL” is displayed on the remote controller.
3. Next, press the UNIT button.
4. The address is displayed for 1 of the indoor units which is connected to the remote controller. Check that the fan of that indoor unit starts and that air is discharged.
5. Press the UNIT button again and check the address of each indoor unit in sequence.
6. Press the button again to return to normal remote controller mode.




Number changes to indicate which indoor unit is currently selected.

5

# 5. Remote Controller Test Run Settings

### Remote Controller Test Run Settings

1. Press the remote controller button for 4 seconds or longer. Then press the button.

- "TEST RUN" appears on the LCD display while the test run is in progress.
- The temperature cannot be adjusted when in Test Run mode.
  (This mode places a heavy load on the machines. Therefore use it only when performing the test run.)

2. The test run can be performed using the HEAT, COOL, or FAN operation modes.
   **Note:** The outdoor units will not operate for approximately 3 minutes after the power is turned ON and after operation is stopped.
3. If correct operation is not possible, a code is displayed on the remote controller LCD display.
   (Refer to "Table of Self-Diagnostic Functions" and correct the problem.)
4. After the test run is completed, press the button again. Check that "TEST RUN" disappears from the LCD display. (To prevent continuous test runs, this remote controller includes a timer function that cancels the test run after 60 minutes.)

* If the test run is performed using the wired remote controller, operation is possible even if the cassette-type ceiling panel has not been installed. ("P09" display does not occur.)

# 6. Caution for Pump Down

### Caution for Pump Down

Pump down means refrigerant gas in the system is returned to the outdoor unit. Pump down is used when the unit is to be moved, or before servicing the refrigerant circuit. (Refer to the Service Manual)

- **This outdoor unit cannot collect more than the rated refrigerant amount as shown by the nameplate on the back.**
- **If the amount of refrigerant is more than that recommended, do not conduct pump down. In this case use another refrigerant collecting system.**

# 7. Meaning of Alarm Messages

## Meaning of Alarm Messages

### Table of Self-Diagnostics Functions and Description of Alarm Displays

Alarm messages are indicated by the blinking of LED 1 and 2 (D72, D75) on the outdoor unit PCB. They are also displayed on the wired remote controller.

- Viewing the LED 1 and 2 (D72 and D75) alarm displays

| LED1 | LED2 | Alarm contents |
|---|---|---|
| ☼ | ☼ | Alarm Display<br>LED 1 blinks M times, then LED 2 blinks N times. The cycle then repeats.<br>M = 2: P alarm 3: H alarm 4: E alarm 5: F alarm 6: L alarm<br>N = Alarm No.<br>Example: LED 1 blinks 2 times, then LED 2 blinks 17 times. The cycle then repeats.<br>Alarm is "P17". |
| Alternating | | |

(☼ : Blinking) Connect the outdoor maintenance remote controller to the RC socket on the outdoor main unit control PCB (3P, blue),and check the Alarm Messages on the remote controller display.

| Possible cause of malfunction | | | | Alarm Message |
|---|---|---|---|---|
| Serial communication errors Mis-setting | Remote controller is detecting error signal from indoor unit. | Error in receiving serial communication signal. (Signal from main indoor unit in case of group control) Ex: Auto address is not completed. | | <E01> |
| | | Error in transmitting serial communication signal. | | <E02> |
| | Indoor unit is detecting error signal from remote controller (and system controller). | | | <<E03>> |
| | Indoor unit is detecting error signal from main outdoor unit. | Error in receiving serial communication signal. When turning on the power supply, the number of connected indoor units does not correspond to the number set. (Except R.C. address is "0.") | | E04 |
| | | Error of the main outdoor unit in receiving serial communication signal from the indoor unit. | | <E06> |
| | Improper setting of indoor unit or remote controller. | Indoor unit address setting is duplicated. | | E08 |
| | | Remote controller address connector (RCU. ADR) is duplicated. (Duplication of main remote controller) | | <<E09>> |
| | During auto address setting, number of connected units does not correspond to number set.<br><br>When turning on the power supply, number of connected units does not correspond to number set. (Except R.C. address is "0.") | Starting auto address setting is prohibited. This alarm message shows that the auto address connector CN100 is shorted while other RC line is executing auto address operation. | | E12 |
| | | Error in auto address setting. (Number of connected indoor units is less than the number set.) | | E15 |
| | | Error in auto address setting. (Number of connected indoor units is more than the number set.) | | E16 |
| | | No indoor unit is connected during auto address setting. | | E20 |
| | | Main outdoor unit is detecting error signal from sub outdoor unit. | | E24 |
| | | Error of outdoor unit address setting. | | E25 |
| | | The number of connected main and sub outdoor units do not correspond to the number set at main outdoor unit PCB. | | E26 |
| | | Error of sub outdoor unit in receiving serial communication signal from main outdoor unit. | | E29 |
| | Indoor unit communication error of group control wiring. | Error of main indoor unit in receiving serial communication signal from sub indoor units. | | E18 |
| | Improper setting. | This alarm message shows when an indoor unit for multiple-use is not connected to the outdoor unit. | | L02 |
| | | Duplication of main indoor unit address setting in group control. | | <L03> |
| | | Duplication of outdoor R.C. address setting. | | L04 |
| | | There are 2 or more indoor unit controllers that have operation mode priority in refrigerant circuit. | Priority set remote controller | L05 |
| | | | Non-priority set remote controller | L06 |
| | | Group control wiring is connected to individual control indoor unit. | | L07 |
| | | Indoor unit address is not set. | | L08 |
| | | Capacity code of indoor unit is not set. | | <<L09>> |
| | | Capacity code of outdoor unit is not set. | | |
| | | Mis-matched connection of outdoor units that have different kinds of refrigerant. | | L17 |
| | | 4-way valve operation failure | | L18 |
| Activation of protective device | Protective device in indoor unit is activated. | Thermal protector in indoor unit fan motor is activated. Improper wiring connections of ceiling panel. | | <<P01>> <<p09>> |
| | | Float switch is activated. | | <<P10>> |

Continued

# 7. Meaning of Alarm Messages

| Possible cause of malfunction | | | Alarm Message |
|---|---|---|---|
| Activation of protective device | Protective device in outdoor unit is activated. | Compressor terminal protector is activated. Power supply voltage is unusual. (The voltage is more than 260 V or less than 160 V between L and N phase.) | P02 |
| | | Incorrect discharge temperature. (comp. No. 1) | P03 |
| | | High pressure switch is activated. | P04 |
| | | Negative (defective) phase. | P05 |
| | | $O^2$ sensor (detects low oxygen level) activated. | P14 |
| | | Compressor running failure resulting from missing phase in the compressor wiring, etc. (Start failure not caused by IPM or no gas.) | P16 |
| | | Incorrect discharge temperature. (Comp. No. 2) | P17 |
| | | Compressor 3 discharge temp. failure | P18 |
| | | Outdoor unit fan motor is unusual. | P22 |
| | | Overcurrent at time of compressor runs more than 80Hz (DCCT secondary current or ACCT primary current is detected at a time other than when IPM has tripped.) | P26 |
| | | IPM trip (IPM current or temperature) | H31 |
| | | Inverter for compressor is unusual. (DC compressor does not operate.) | P29 |
| Thermistor fault | Indoor thermistor is either open or damaged. | Indoor coil temp. sensor (E1) | <<F01>> |
| | | Indoor coil temp. sensor (E2) | <<F02>> |
| | | Indoor coil temp. sensor (E3) | <<F03>> |
| | | Indoor suction air (room) temp. sensor (TA) | <<F10>> |
| | | Indoor discharge air temp. sensor (BL) | <<F11>> |
| | Outdoor thermistor is either open or damaged. | Comp. No. 1 discharge gas temp. sensor (DISCH1) | F04 |
| | | Comp. No. 2 discharge gas temp. sensor (DISCH2) | F05 |
| | | Outdoor No. 1 coil gas temp. sensor (EXG1) | F06 |
| | | Outdoor No. 1 coil liquid temp. sensor (EXL1) | F07 |
| | | Outdoor air temp. sensor (AIR TEMP) | F08 |
| | | Compressor intake port temperature sensor (RDT) | F12 |
| | | High pressure sensor. Negative (defective) N phase. | F16 |
| | | Low-pressure sensor failure | F17 |
| | | Compressor 3 discharge temp. sensor failure (DISCH3) | F22 |
| | | Outdoor No. 2 coil gas temp. sensor (EXG2) | F23 |
| | | Outdoor No. 2 coil liquid temp. sensor (EXL2) | F24 |
| EEP ROM on indoor unit PCB failure | | | F29 |
| Protective device for compressor is activated | Protective device for compressor No.1 is activated. | EEP ROM on the main or sub outdoor unit PCB has failed. | F31 |
| | | Overload current is detected. | H01 |
| | | Lock current is detected. | H02 |
| | | Current is not detected when comp. No. 1 is ON. | H03 |
| | | Discharge gas temperature of the comp. No. 1 is not detected. Temp. sensor is not seated at the sensor holder. | H05 |
| | Protective device for compressor No.2 is activated | Overload current is detected. | H11 |
| | | Lock current is detected. | H12 |
| | | Current is not detected when comp. No.2 is ON. | H13 |
| | | Discharge gas temperature of comp. No.2 is not detected. | H15 |
| | Protective device for compressor No.3 is activated. | Compressor no.3 current trouble (overcurrent) | H21 |
| | | Compressor No.3 current trouble (locked) | H22 |
| | | Compressor No.3 CT sensor disconnected or short circuit | H23 |
| | | Compressor No.3 discharge temp. sensor disconnected | H25 |
| | | Low pressure switch is activated. | H06 |
| | Low oil level. | | H07 |
| | Oil sensor fault. (Disconnection, etc.) | Comp. No.1 oil sensor | H08 |
| | | Comp. No.2 oil sensor | H27 |
| | | Oil sensor (connection) failure | H28 |

Continued

# 7. Meaning of Alarm Messages

| **Alarm messages displayed on system controller** | | | |
|---|---|---|---|
| Serial communication errors Mis-setting | Error in transmitting serial communication signal | Indoor or main outdoor unit is not operating correctly.<br>Mis-wiring of control wiring between indoor unit, main outdoor unit and system controller. | C05 |
| | Error in receiving serial communication signal | Indoor or main outdoor unit is not operating correctly.<br>Mis-wiring of control wiring between indoor unit, main outdoor unit and system controller.CN1 is not connected properly. | C06 |
| Activation of protective device | Protective device of sub indoor unit in group control is activated | When using wireless remote controller or system controller, in order to check the alarm message in detail, connect wired remote controller to indoor unit temporarily. | P30 |

**NOTE**

1. Alarm messages in << >> do not affect other indoor unit operations.
2. Alarm messages in < > sometimes affect other indoor unit operations depending on the fault.

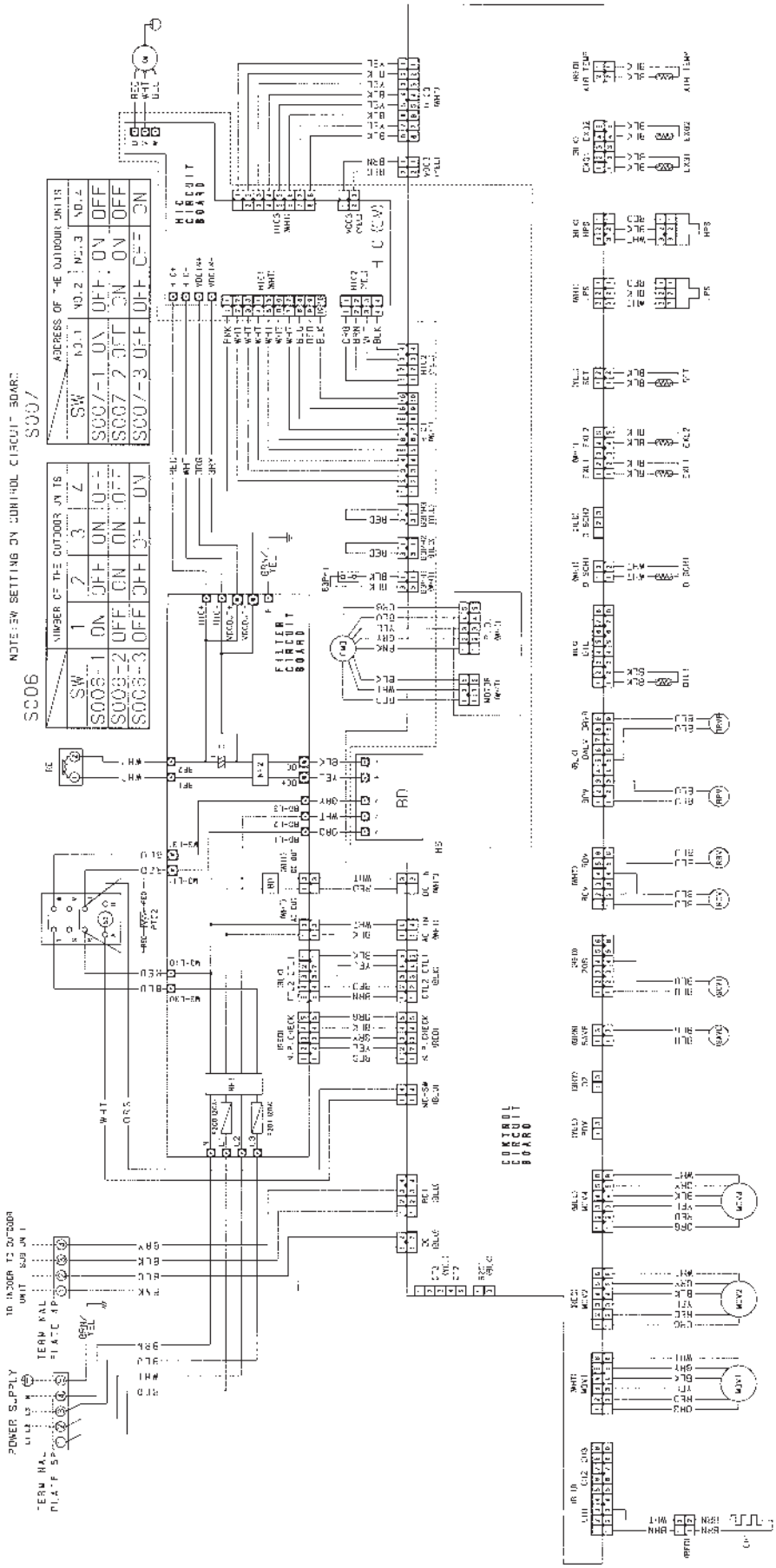
## Contents

# 6. ELECTRICAL DATA

**1. Outdoor Unit .....6-2**
(1) Electric Wiring Diagram SPW-C0705DXHN8 .....6-2
(2) Electric Wiring Diagram SPW-C0905/C1155DXHN8.....6-4
(3) Electric Wiring Diagram SPW-C1305/C1405DXHN8.....6-6
**2. Indoor Unit .....6-8**
(1) Electric Wiring Diagram SPW-GU055/075/105XH.....6-8
(2) Schematic Diagram SPW-GU055/075/105XH .....6-9

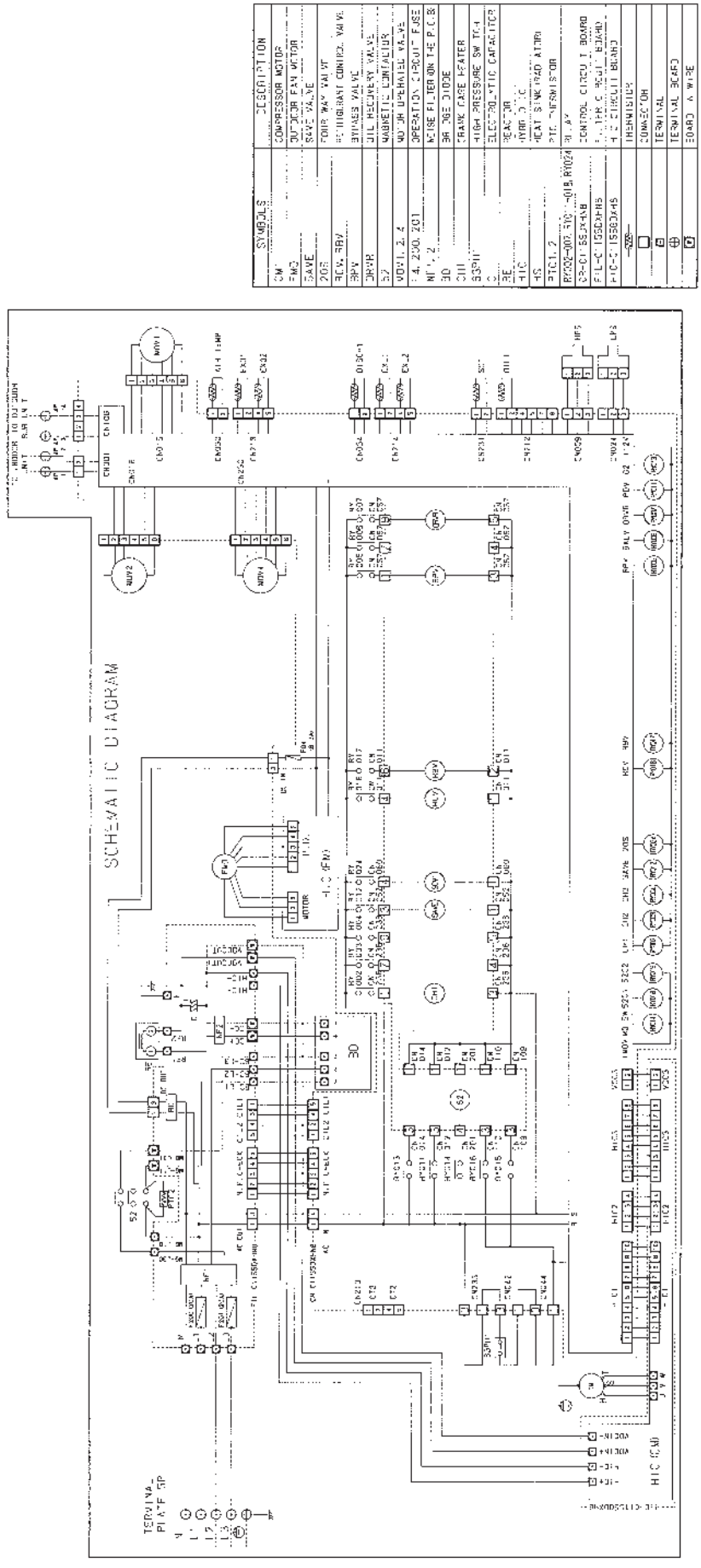
# 1. Outdoor Unit

### (1) Electric Wiring Diagram SPW-C0705DXHN8



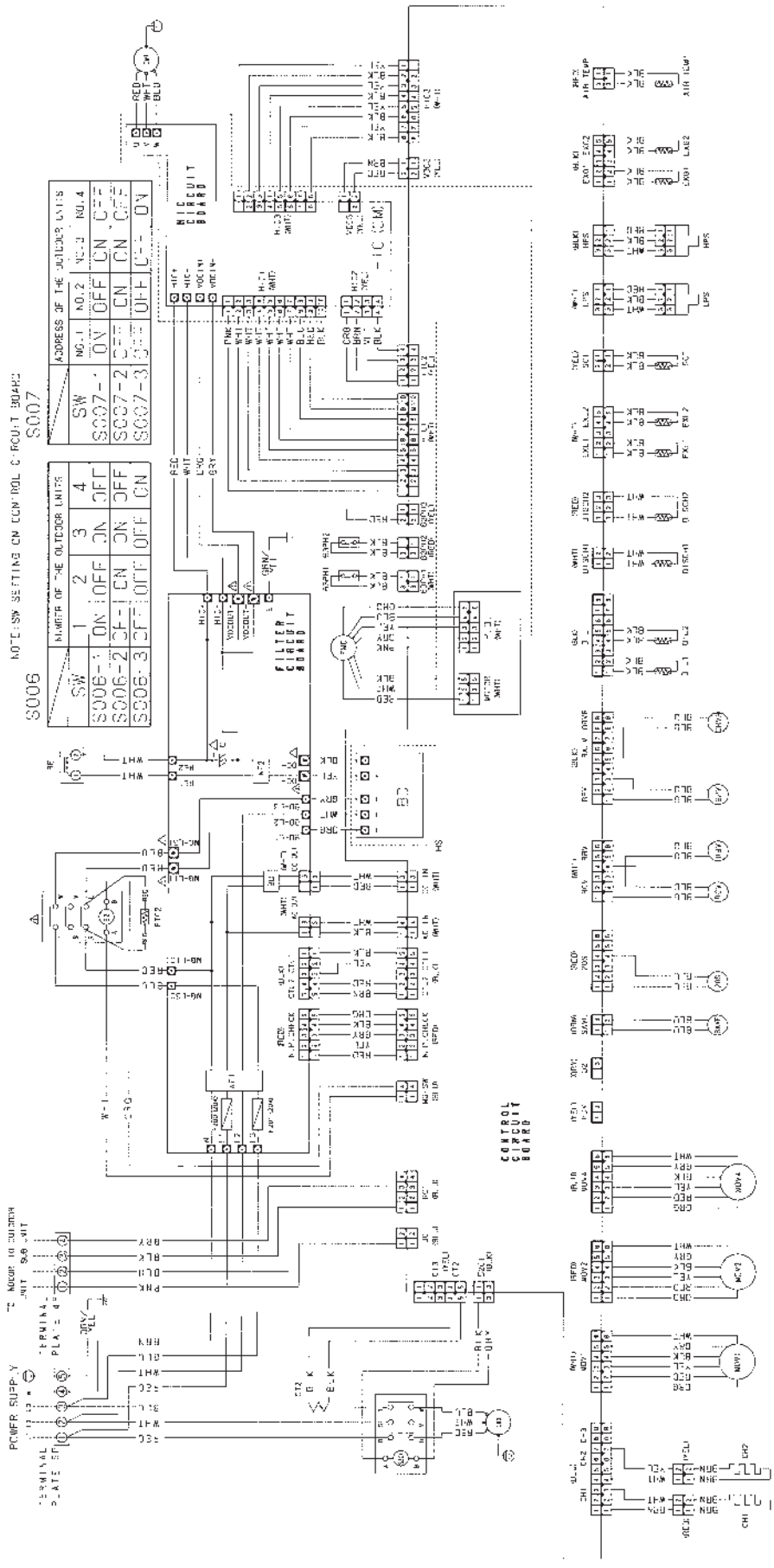
# 1. Outdoor Unit

**Schematic Diagram SPW-C0705DXHN8**



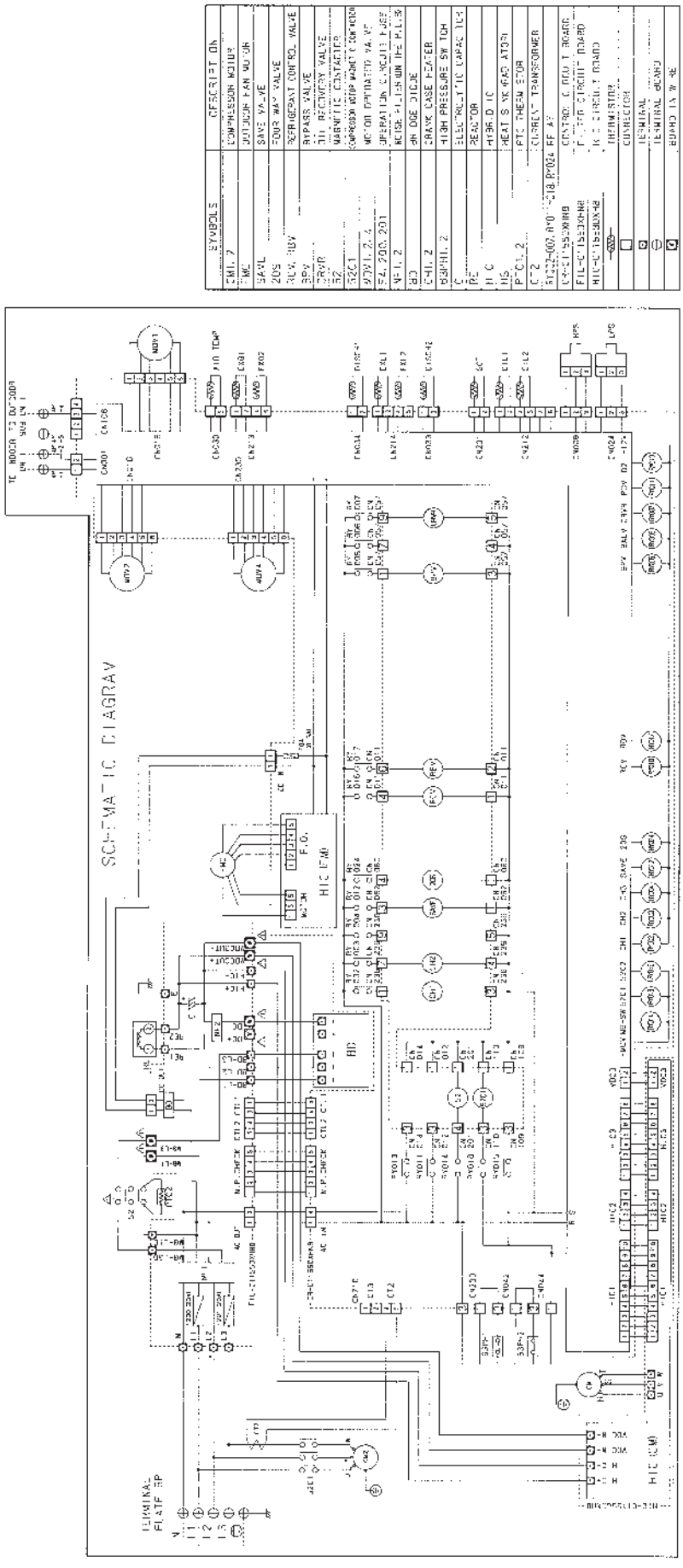
# 1. Outdoor Unit

### (2) Electric Wiring Diagram SPW-C0905/C1155DXHN8



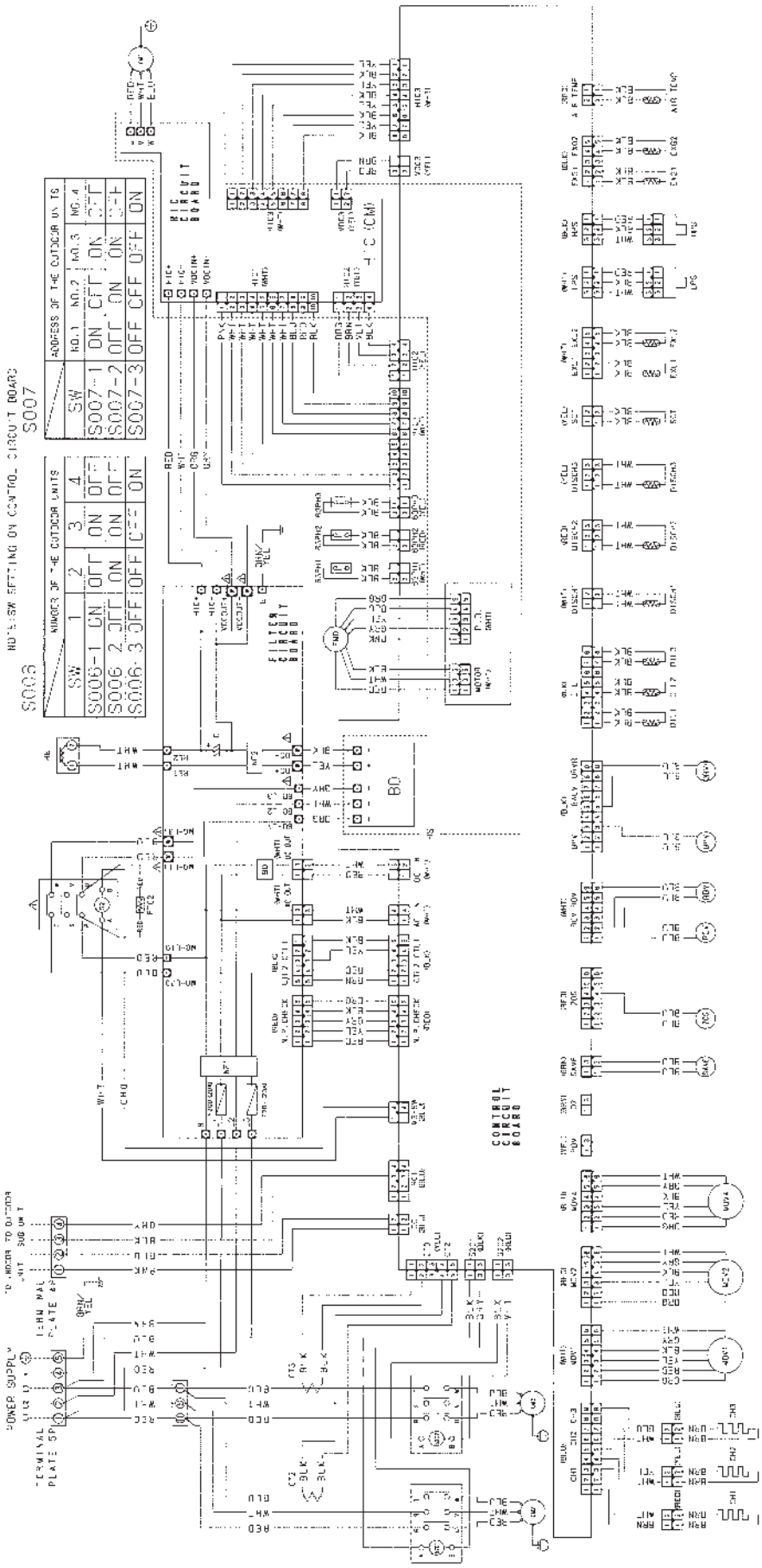
# 1. Outdoor Unit

**Schematic Diagram SPW-C0905/C1155DXHN8**



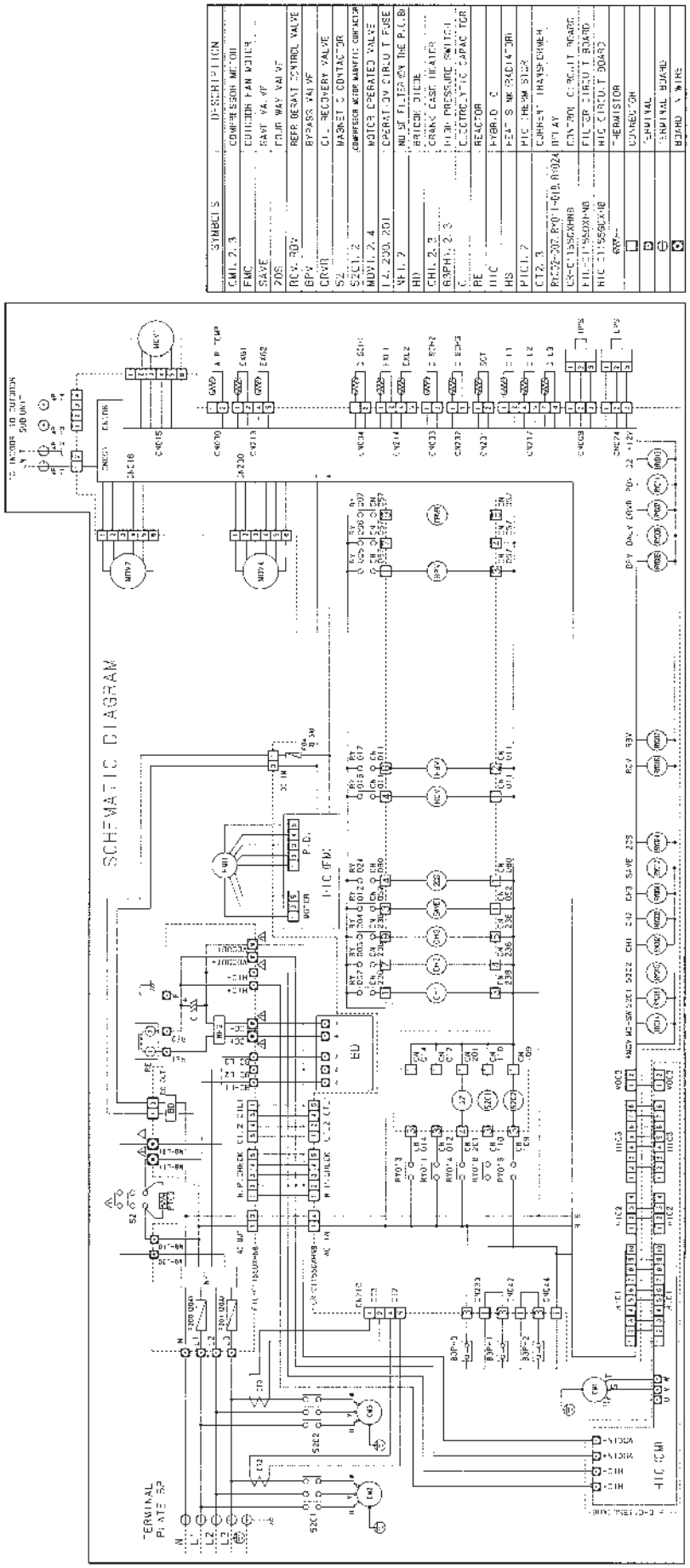
# 1. Outdoor Unit

### (3) Electric Wiring Diagram SPW-C1305/C1405DXHN8



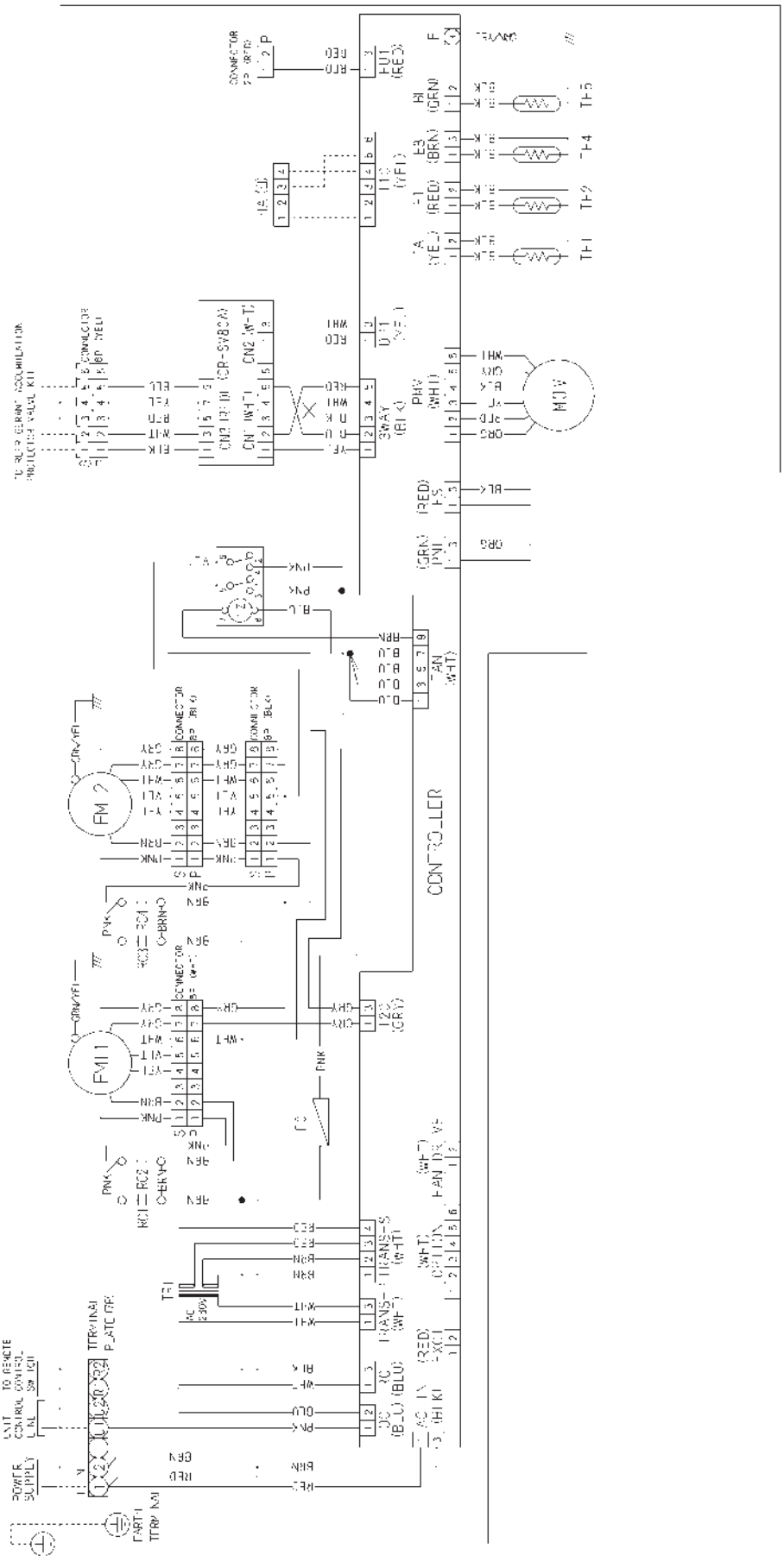
# 1. Outdoor Unit

**Schematic Diagram SPW-C1305/C1405DXHN8**



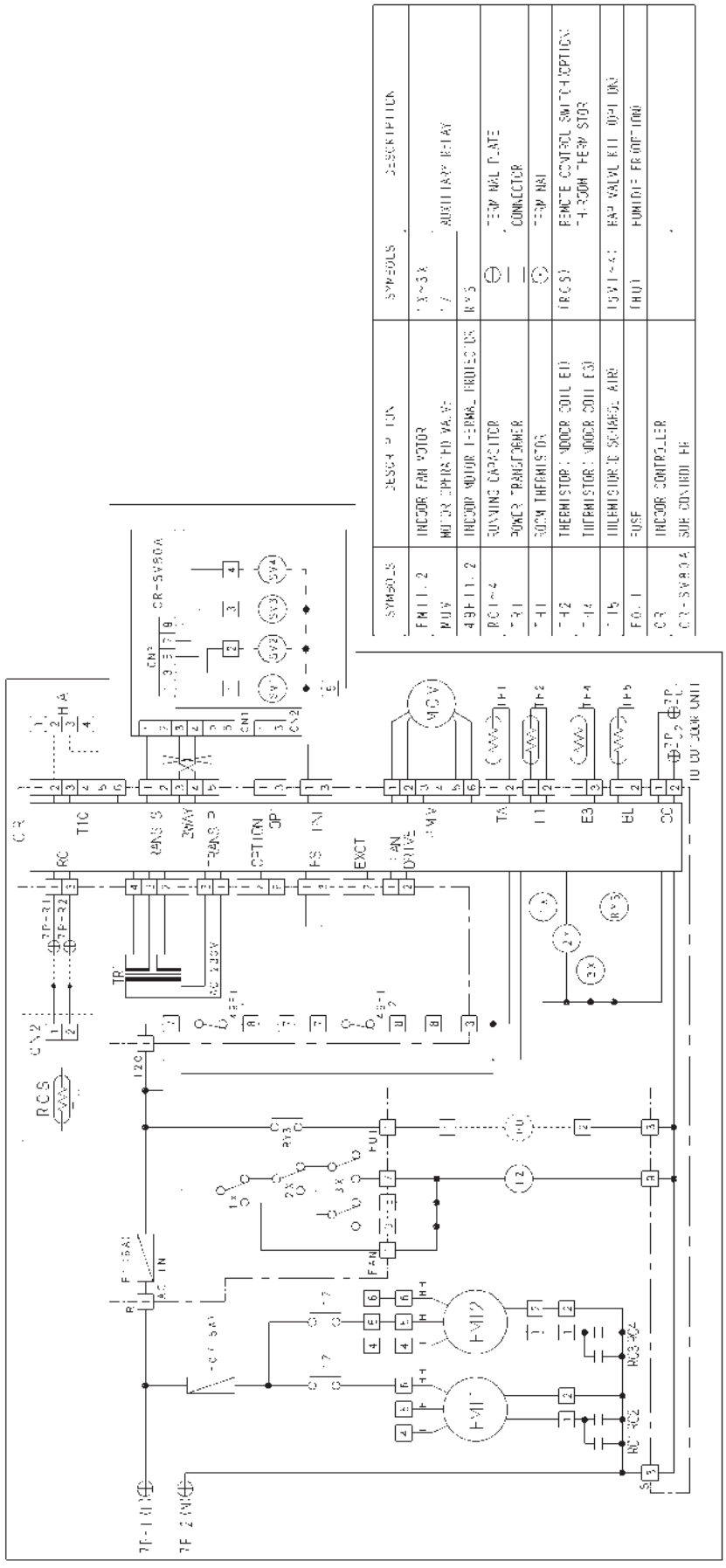
# 2. Indoor Unit

### (1) Electric Wiring Diagram SPW-GU055/075/105XH



# 2. Indoor Unit

### (2) Schematic Diagram SPW-GU055/075/105XH

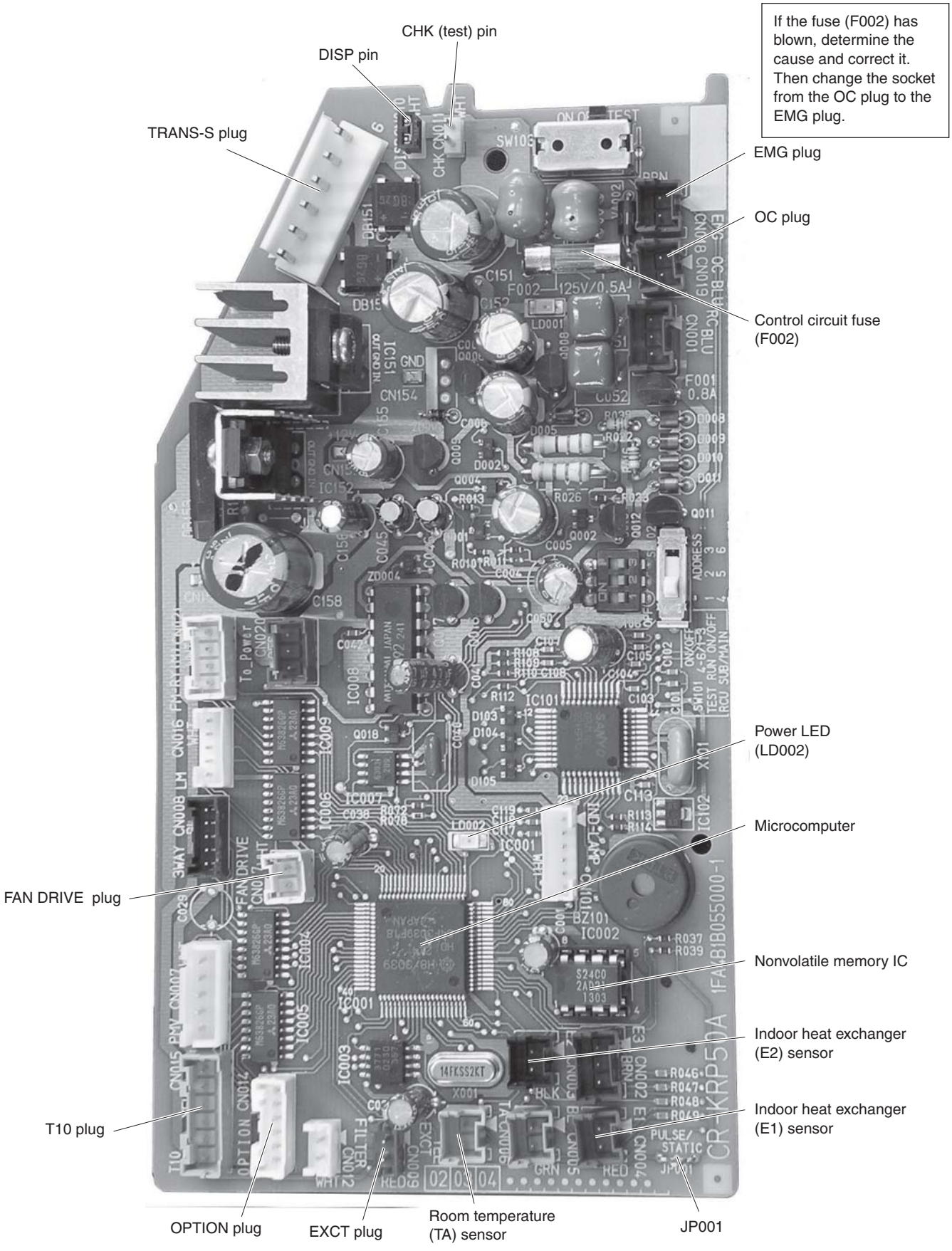


# 2. Indoor Unit Control PCB Switches and Functions

## Explanation of Functions

### Indoor Unit Control PCB

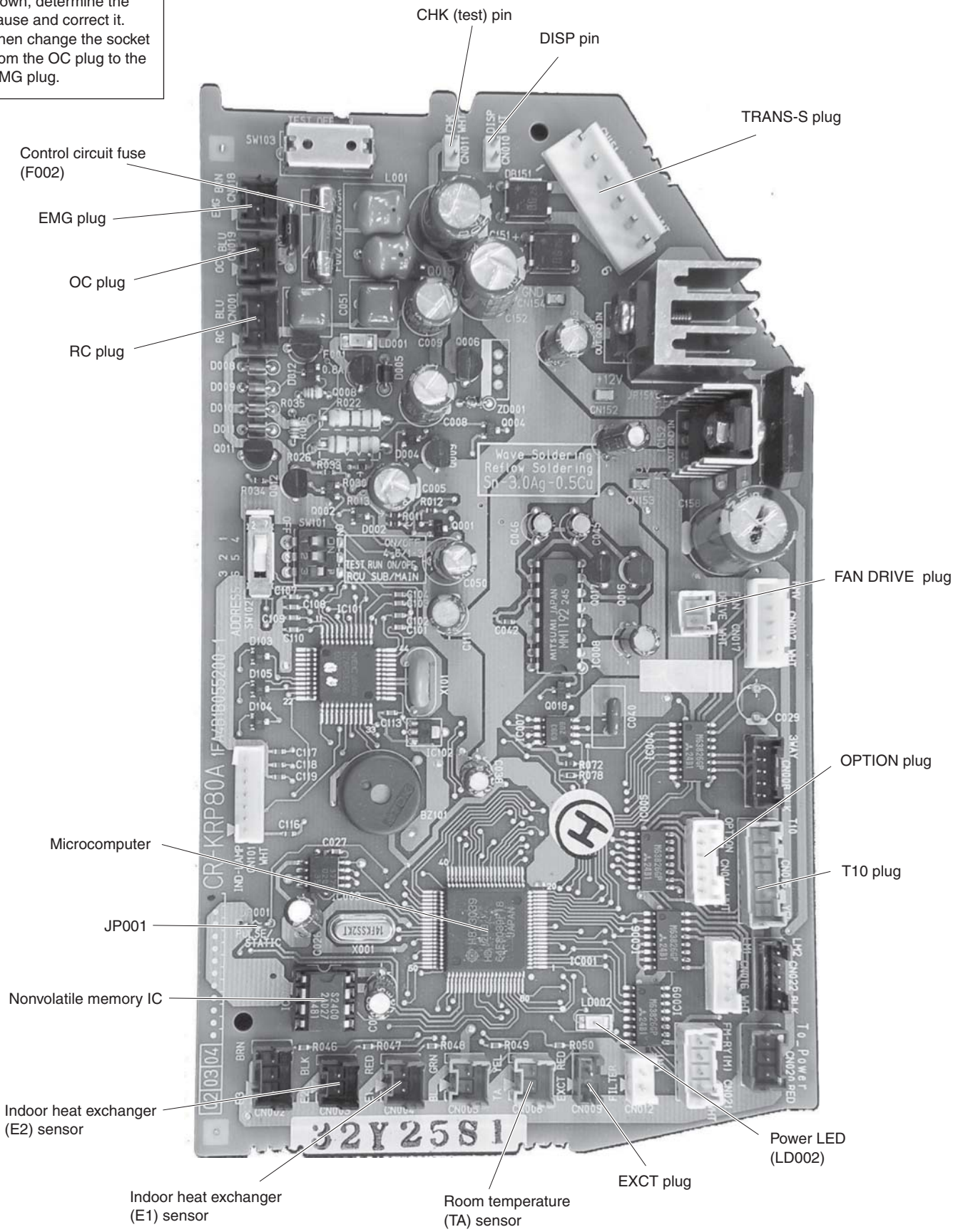
### 2-2. CR1 (for CR-KR74GXH56/SPW-KR74GXH56~SPW-KR184GXH56) (Wall Mounted)



# 2. Indoor Unit Control PCB Switches and Functions

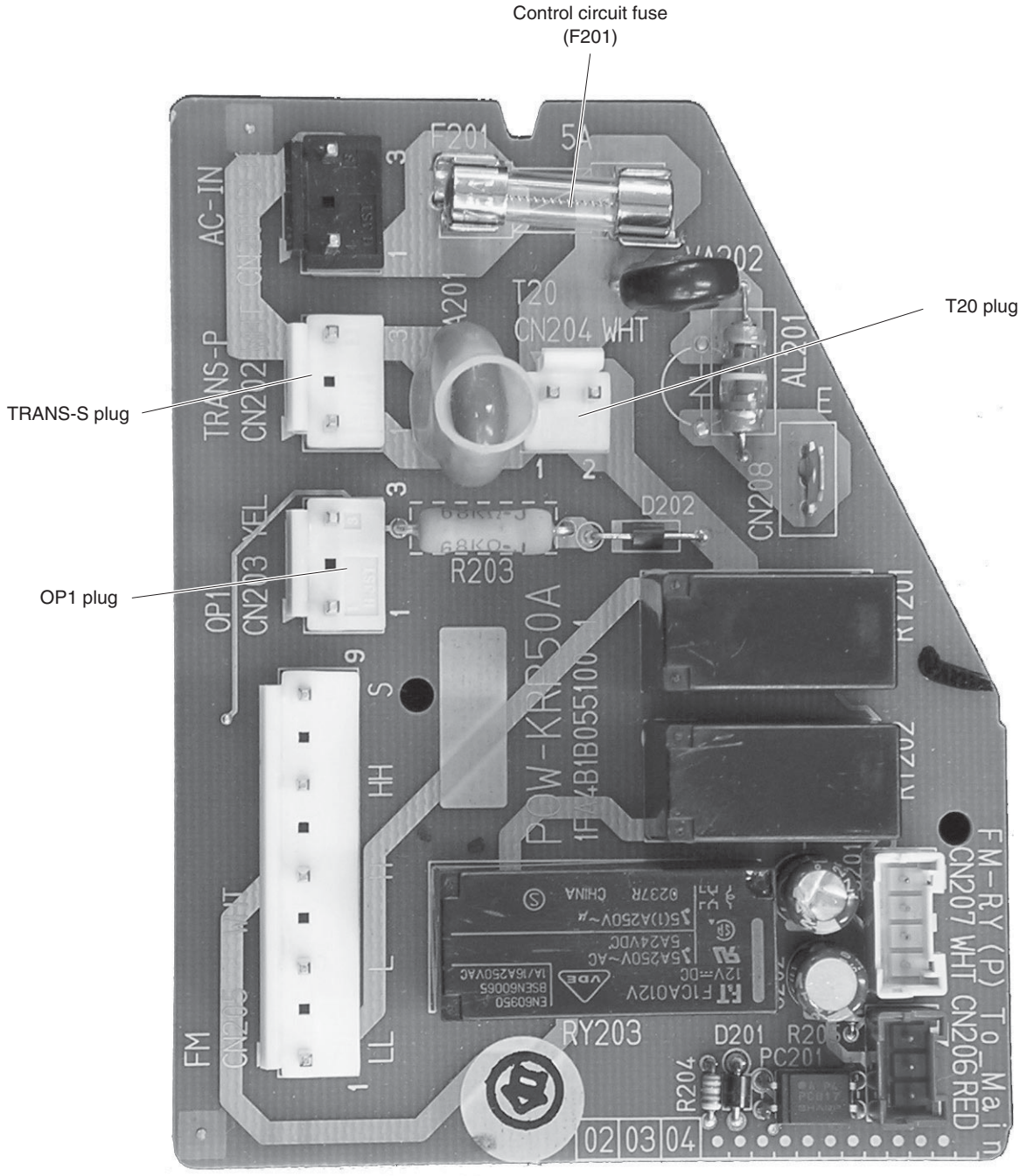
## 2-3. CR1 (for CR-KR254GXH56/SPW-KR254GXH56) (Wall Mounted)

If the fuse (F002) has blown, determine the cause and correct it. Then change the socket from the OC plug to the EMG plug.



# 2. Indoor Unit Control PCB Switches and Functions

### 2-4. CR2 (for POW-KR74GXH56/SPW-KR74GXH56~SPW-KR254GXH56) (Wall Mounted)

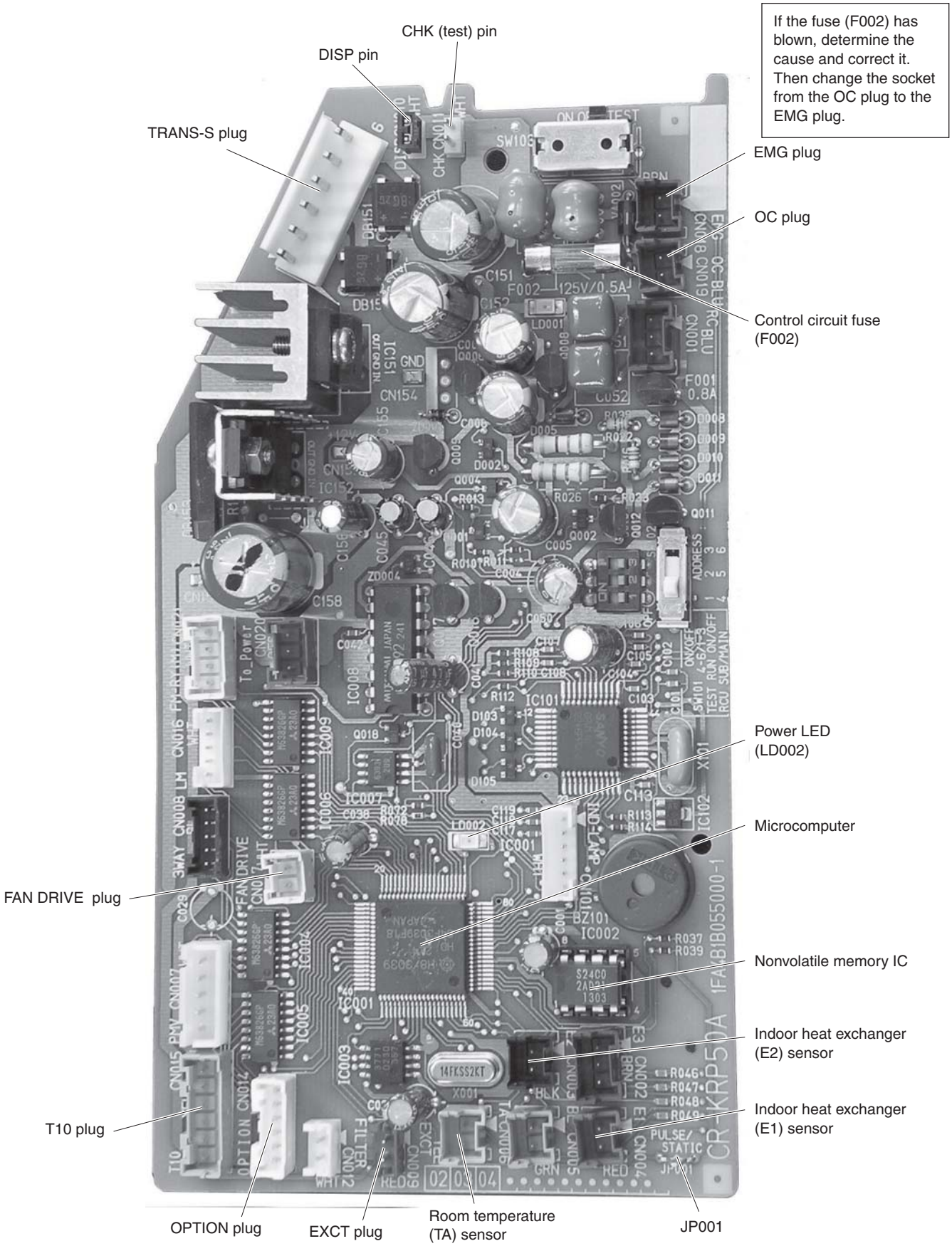


# 2. Indoor Unit Control PCB Switches and Functions

## Explanation of Functions

### Indoor Unit Control PCB

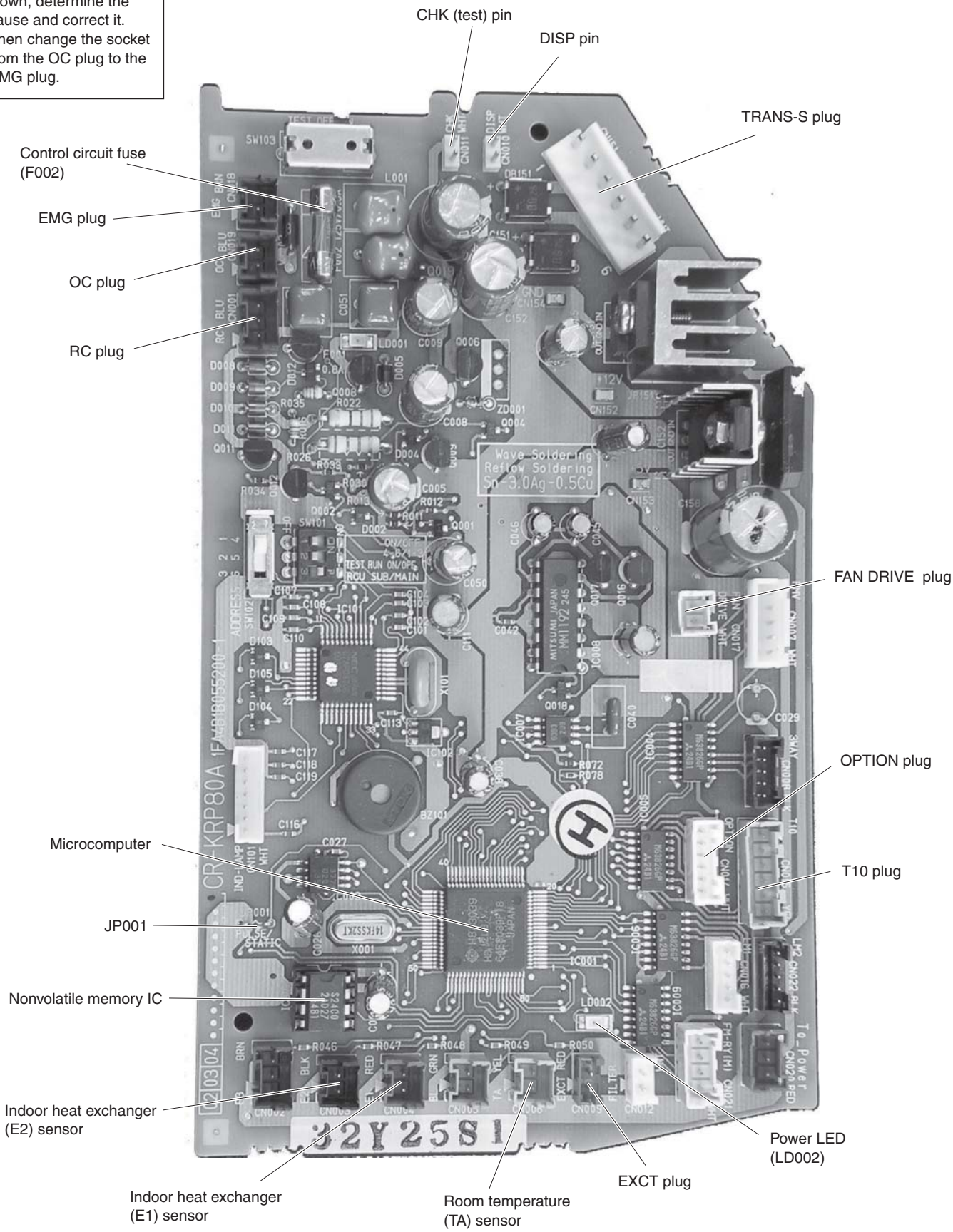
### 2-2. CR1 (for CR-KR74GXH56/SPW-KR74GXH56~SPW-KR184GXH56) (Wall Mounted)



# 2. Indoor Unit Control PCB Switches and Functions

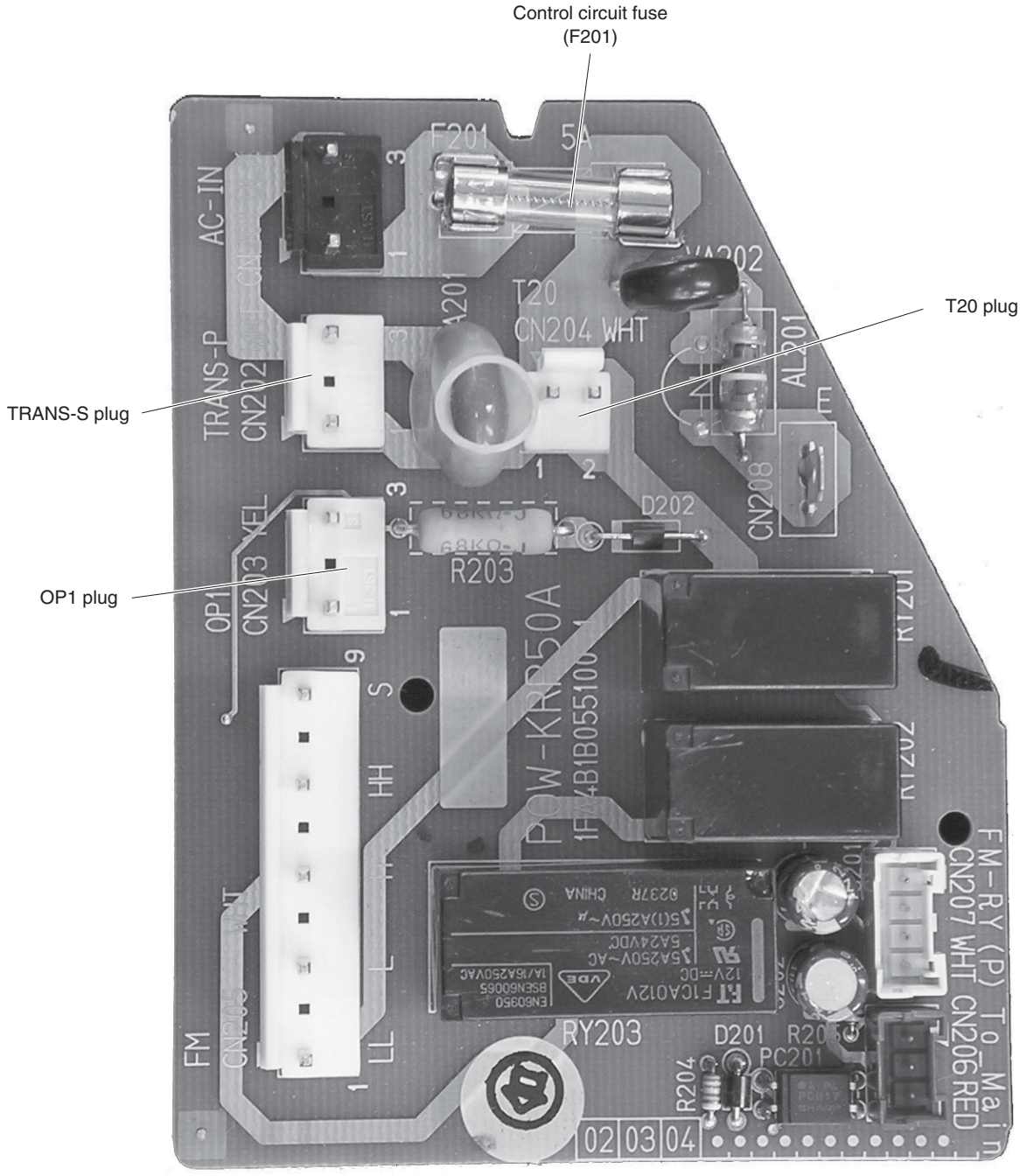
## 2-3. CR1 (for CR-KR254GXH56/SPW-KR254GXH56) (Wall Mounted)

If the fuse (F002) has blown, determine the cause and correct it. Then change the socket from the OC plug to the EMG plug.



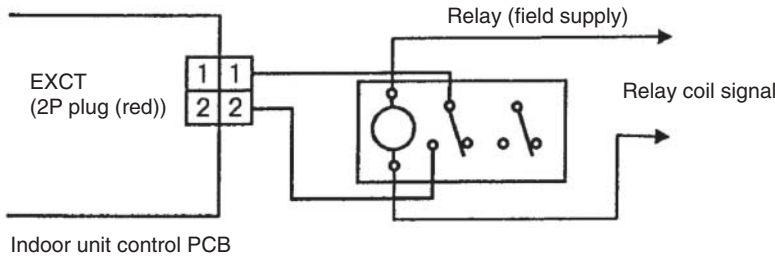
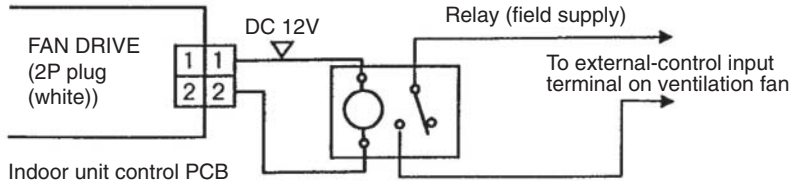
# 2. Indoor Unit Control PCB Switches and Functions

### 2-4. CR2 (for POW-KR74GXH56/SPW-KR74GXH56~SPW-KR254GXH56) (Wall Mounted)

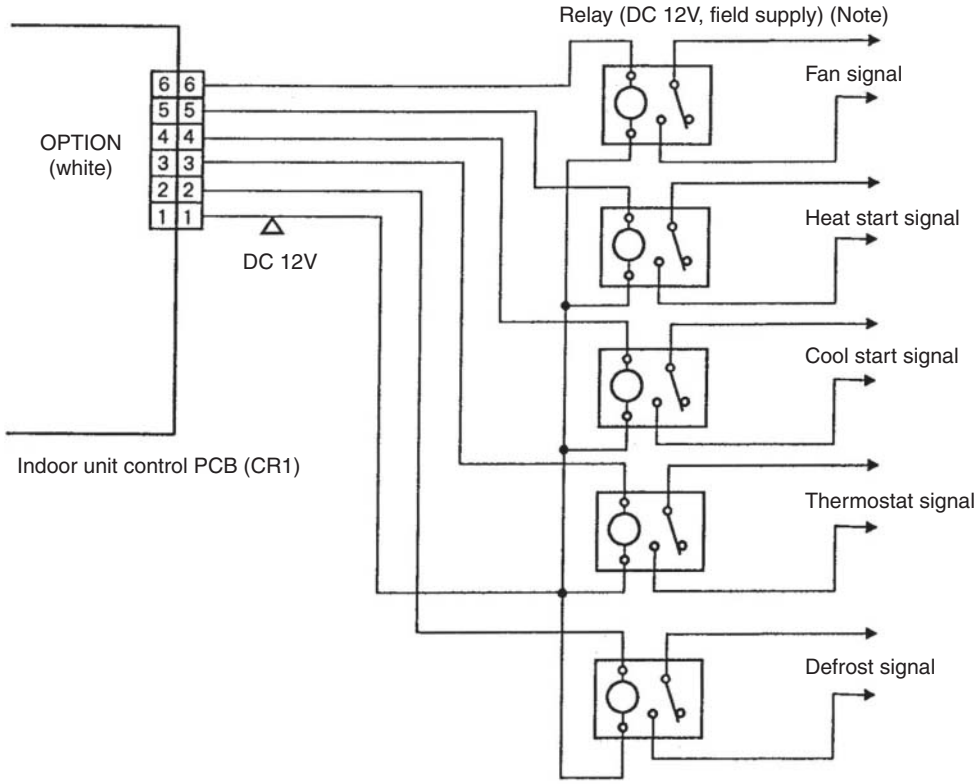


# 2. Indoor Unit Control PCB Switches and Functions

### 2-5. Explanation of Functions (CR-KXRP56AN, CR-KXRP80AN, POW-KRP50A)

| | |
|---|---|
| T10<br>(CN105)<br>(for remote control) | 6P flag (yellow): Used for remote control.<br>Control items: ① Start/stop input ② Remote controller prohibit input<br>③ Start signal output ④ Alarm signal output |
| EXCT<br>(CN009) | 2P plug (red): Can be used for demand control. When input is present, forces the unit to operate with the thermostat OFF.<br>● Examples of wiring<br>* Lead wire with 2P plug (special-order part: WIRE K/854 05280 75300)<br>  <br><br>Note: The length of the wiring from the indoor unit control PCB to the relay must be 2 m or less. |
| DISP<br>(CN010) | 2P plug (white): Short-circuiting this plug allows the unit to be operated by the remote controller, even if it is not connected to an outdoor unit. (In this case, alarm "E04," which indicates trouble in the serial communication between the indoor and outdoor unit, does not occur.) |
| CHK<br>(CN011) | 2P plug (white): Test pin. Short circuiting this plug allows the operation of the indoor fan motor (high) and flap motor (F1 position) to be checked. However this test operation stops if the indoor unit protection mechanism is activated. The unit can be operated even if the remote controller and outdoor unit are not connected. However even if the remote controller cannot is connected, it cannot be used to operate the unit. This function can be used for short-term tests. |
| JP001 | Jumper wire: Allows selection of the T10 terminal start/stop signal. Status at shipment: Pulse signal Jumper wire cut: Static signal (continuous signal) |
| FAN DRIVE<br>(CN017) | 2P plug (white): This terminal sends a signal to the ventilation fan when the FAN button on the wired remote controller is used to operate a commercially-available ventilation fan. Use a ventilation fan that can accept no-voltage A contact as the external input signal.<br>● Examples of wiring<br>* Lead wire with 2P plug (special-order part: WIRE K/854 05280 50600)<br>  <br><br>Note: The length of the wiring from the indoor unit control PCB to the relay must be 2 m or less. |

## 2. Indoor Unit Control PCB Switches and Functions

| | |
|---|---|
| OPTION<br>(CN014) | 6P (white): Outputs external signals as shown in the figure below.<br>  <br><br>Note: The relay must be installed at a distance of 2 m or less from the PCB. |

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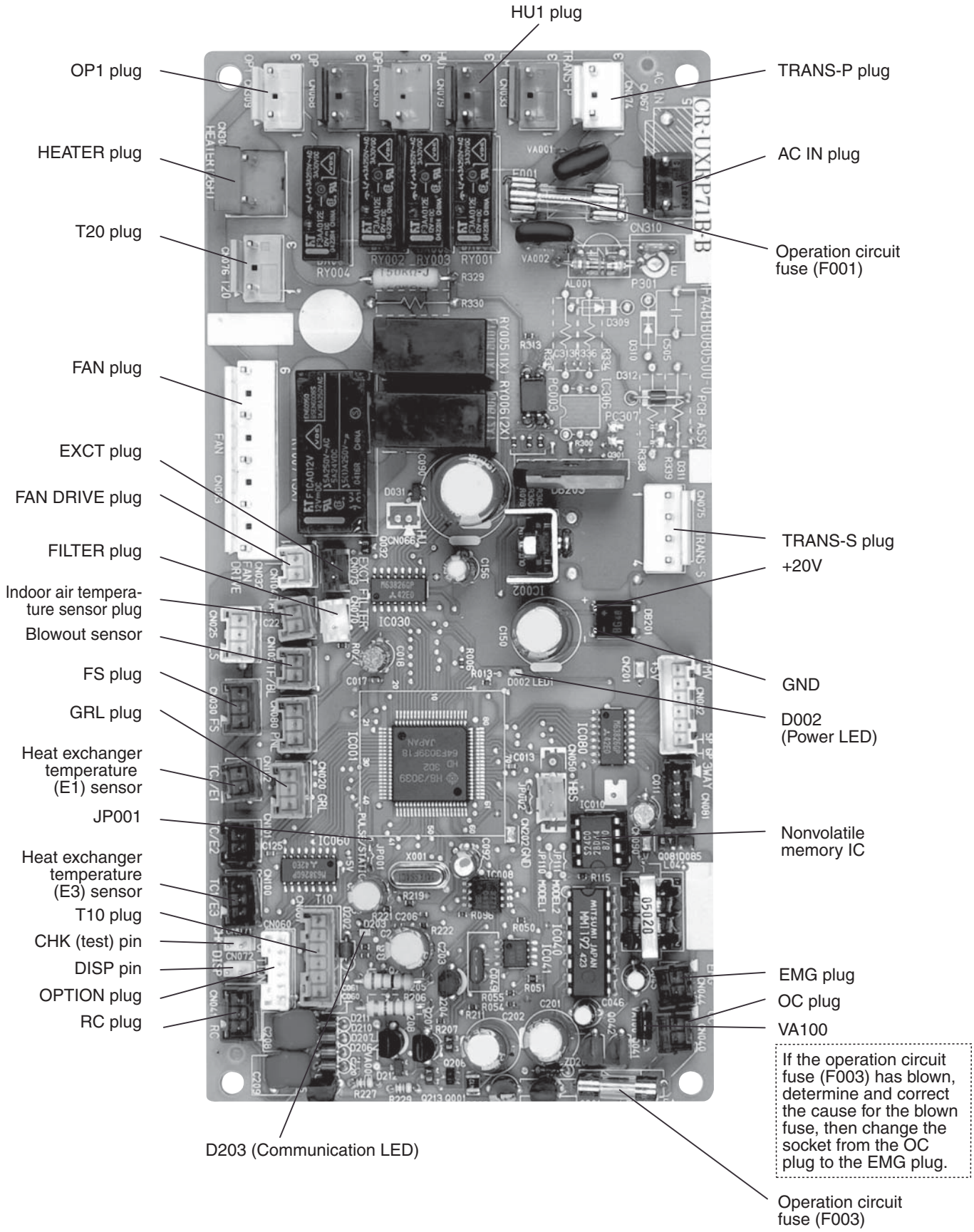
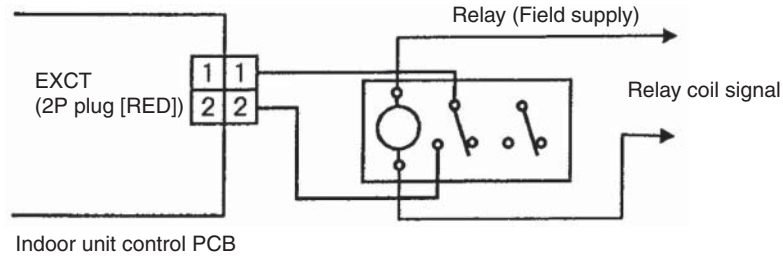
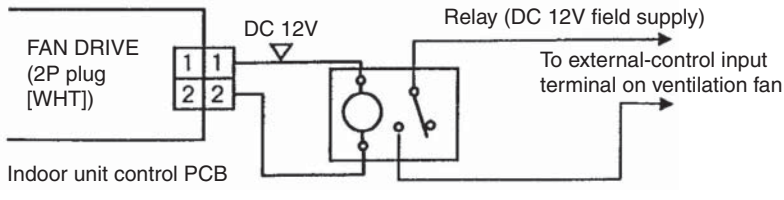
# 2. Indoor Unit Control PCB Switches and Functions

### 2-6. Control PCB (CR-UXRP71B-B) (Heat Recovery with Direct - Expansion Coil)



# 2. Indoor Unit Control PCB Switches and Functions

## 2-7. Explanation of Functions

| | |
|---|---|
| T10<br>(CN061)<br>(for remote control operation) | 6P plug (YEL): Used for remote control operation.<br>Control items: ① Start/stop input ② Remote controller prohibit input<br>③ Start signal output ④ Alarm signal output<br><br>● Wiring example: Refer to 2-8. T10 Terminal Wiring Example<br>• No Signal OFF |
| EXCT<br>(CN073) | 2P plug (RED): Can be used for demand control. When input is present, forces the unit to operate with the thermostat OFF.<br><br>● Wiring example:<br>* Lead wire with 2P plug (Special-order parts: WIRE K 623 174 4263)<br>  <br><br>Note: The wire length from the indoor unit control PCB to the relay must be within 2 meters. |
| DISP<br>(CN072) | 2P plug (WHT)/Short-circuiting this plug allows the indoor unit to operate independently. (Mainly used at the shop front and exhibitions etc. Please do not connect to the outdoor unit.) |
| CHK<br>(CN071) | 2P plug (WHT)/Test pin. Short circuiting this pin allows the indoor fan motor (High) to be checked. However, this function stops when the indoor unit safety device is activated. The components will operate even if the remote controller and outdoor unit are not connected, but the remote controller cannot be used to operate the unit. This function can be used for short-term tests. |
| JP001 | Jumper wire/Allows selection of the T10 terminal start/stop signal.<br>Default status: Pulse signal<br>Jumper wire cut: Static signal (continuous signal) |
| FAN DRIVE<br>(CN032) | 2P plug (WHT)/This terminal sends a signal to the ventilation fan when a commercially available ventilation fan is operated by the FAN button on the wired remote controller. Use a ventilation fan which can accept the no-voltage contact A signal as the external input signal.<br><br>● Wiring example:<br>Lead wire with 2P plug (Special-order parts: WIRE K 623 162 4435)<br>  <br><br>Note: The wire length from the indoor unit control PCB to the relay must be within 2 meters. |

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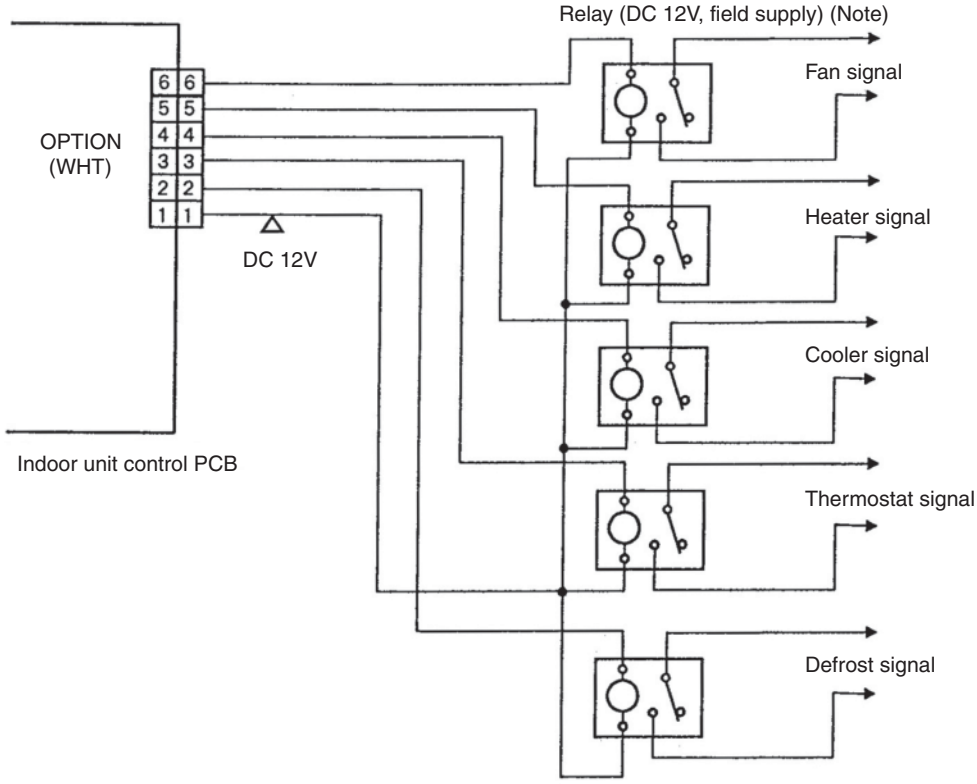
## 2. Indoor Unit Control PCB Switches and Functions

| | |
|---|---|
| HU1<br>(CN079) | 2P (RED)/Used for Humidifier output. |
| OPTION<br>(CN060) | 6P (WHT), Outputs external signals as shown in the figure below.<br>  <br><br>Note: The relay must be installed within 2 meters from the PCB. |

# 2. Indoor Unit Control PCB Switches and Functions

## 2-8. T10 Terminal Wiring Example

### ■ No Signal OFF Control

**No Signal OFF Control**

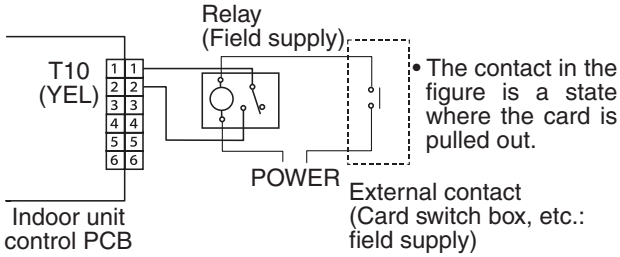
- This is a method to control the Indoor unit individually, and is to connect to the Indoor unit.
- In case of group control, the unit can be operated even if each indoor unit (Control PCB) is connected within the group.
- You can use this function to stop the operation and do not need the external operation control.
- When the card switch box and the card lock etc. are used, you can prevent from leaving on the indoor unit.
- When the card is inserted, start-stop operation is permitted with the remote-controller.
- When the card is pulled out, the indoor unit stops if it is operating and prohibits the start-stop operation of the remote-controller.

**Control items**

(1) When external contact is ON: the start-stop operation is permitted with the remote-controller.
(Status: When the card is inserted in the card switch box)

(2) When external contact is OFF: the start-stop operation of the remote-controller is prohibited.
(Status: When the card is removed from the card switch box)

* If the card switch box does not operate as the above-mentioned operation, please exchange it with the relay of the b contact.




Note: The wire length from the indoor unit control PCB to the relay must be within 2 meters.
Lead wire with 6P plug
(Special-order parts: WIRE K 623 176 6814)

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## Contents

# 8. CAPACITY TABLE

**1. SPW-C0705DXHN8 (Cooling).....8-2**
**2. SPW-C0705DXHN8 (Heating).....8-4**
**3. SPW-C0905DXHN8 (Cooing).....8-6**
**4. SPW-C0905DXHN8 (Heating).....8-8**
**5. SPW-C1155DXHN8 (Cooling).....8-10**
**6. SPW-C1155DXHN8 (Heating).....8-12**
**7. SPW-C1305DXHN8 (Cooling).....8-14**
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# 1. SPW-C0705DXHN8 (Cooling)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 130% | -5.0 | 19.3 | 2.15 | 20.9 | 2.53 | 22.5 | 2.84 | 24.1 | 3.22 | 25.7 | 3.47 | 27.4 | 3.72 | 29.0 | 4.01 |
| | 0.0 | 19.3 | 2.21 | 20.9 | 2.59 | 22.5 | 2.90 | 24.1 | 3.25 | 25.7 | 3.54 | 27.4 | 3.85 | 29.0 | 4.17 |
| | 5.0 | 19.3 | 2.27 | 20.9 | 2.65 | 22.5 | 2.97 | 24.1 | 3.31 | 25.7 | 3.66 | 27.4 | 3.98 | 29.0 | 4.29 |
| | 10.0 | 19.3 | 2.43 | 20.9 | 2.71 | 22.5 | 3.03 | 24.1 | 3.35 | 25.7 | 3.79 | 27.4 | 4.17 | 29.0 | 4.61 |
| | 15.0 | 19.3 | 2.62 | 20.9 | 2.90 | 22.5 | 3.22 | 24.1 | 3.47 | 25.7 | 3.98 | 27.4 | 4.55 | 29.0 | 5.05 |
| | 20.0 | 19.3 | 2.84 | 20.9 | 3.16 | 22.5 | 3.41 | 24.1 | 3.72 | 25.7 | 4.36 | 27.4 | 5.05 | 29.0 | 5.68 |
| | 25.0 | 19.3 | 3.28 | 20.9 | 3.60 | 22.5 | 3.91 | 24.1 | 4.23 | 25.7 | 4.92 | 27.4 | 5.87 | 28.5 | 6.05 |
| | 30.0 | 19.3 | 3.79 | 20.9 | 4.17 | 22.5 | 4.61 | 24.1 | 4.99 | 25.7 | 6.06 | 26.6 | 6.19 | 27.5 | 6.42 |
| | 35.0 | 19.3 | 4.48 | 20.9 | 5.11 | 22.5 | 5.68 | 24.1 | 6.31 | 24.6 | 6.50 | 25.4 | 6.63 | 26.4 | 6.79 |
| | 40.0 | 19.3 | 5.56 | 20.9 | 6.19 | 22.5 | 6.50 | 22.9 | 6.63 | 23.4 | 6.82 | 24.0 | 7.01 | 25.1 | 7.17 |
| | 43.0 | 19.3 | 6.44 | 20.9 | 6.57 | 21.2 | 6.69 | 21.7 | 6.82 | 22.5 | 7.01 | 23.2 | 7.20 | 24.1 | 7.39 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 120% | -5.0 | 18.8 | 2.12 | 20.4 | 2.49 | 21.9 | 2.80 | 23.5 | 3.18 | 25.1 | 3.43 | 26.6 | 3.68 | 28.2 | 3.96 |
| | 0.0 | 18.8 | 2.18 | 20.4 | 2.55 | 21.9 | 2.87 | 23.5 | 3.21 | 25.1 | 3.49 | 26.6 | 3.80 | 28.2 | 4.11 |
| | 5.0 | 18.8 | 2.24 | 20.4 | 2.62 | 21.9 | 2.93 | 23.5 | 3.27 | 25.1 | 3.61 | 26.6 | 3.92 | 28.2 | 4.24 |
| | 10.0 | 18.8 | 2.40 | 20.4 | 2.68 | 21.9 | 2.99 | 23.5 | 3.30 | 25.1 | 3.74 | 26.6 | 4.11 | 28.2 | 4.55 |
| | 15.0 | 18.8 | 2.59 | 20.4 | 2.87 | 21.9 | 3.18 | 23.5 | 3.43 | 25.1 | 3.92 | 26.6 | 4.49 | 28.2 | 4.98 |
| | 20.0 | 18.8 | 2.80 | 20.4 | 3.11 | 21.9 | 3.36 | 23.5 | 3.68 | 25.1 | 4.30 | 26.6 | 4.98 | 28.2 | 5.61 |
| | 25.0 | 18.8 | 3.24 | 20.4 | 3.55 | 21.9 | 3.86 | 23.5 | 4.17 | 25.1 | 4.86 | 26.6 | 5.79 | 27.8 | 5.97 |
| | 30.0 | 18.8 | 3.74 | 20.4 | 4.11 | 21.9 | 4.55 | 23.5 | 4.92 | 25.1 | 5.98 | 25.9 | 6.11 | 26.8 | 6.34 |
| | 35.0 | 18.8 | 4.42 | 20.4 | 5.05 | 21.9 | 5.61 | 23.5 | 6.23 | 24.0 | 6.42 | 24.7 | 6.54 | 25.8 | 6.70 |
| | 40.0 | 18.8 | 5.48 | 20.4 | 6.11 | 21.9 | 6.42 | 22.3 | 6.54 | 22.8 | 6.73 | 23.4 | 6.91 | 24.5 | 7.07 |
| | 43.0 | 18.8 | 6.35 | 20.4 | 6.48 | 20.7 | 6.60 | 21.2 | 6.73 | 21.9 | 6.91 | 22.6 | 7.10 | 23.5 | 7.29 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 110% | -5.0 | 18.4 | 2.07 | 19.9 | 2.44 | 21.5 | 2.74 | 23.0 | 3.11 | 24.5 | 3.35 | 26.1 | 3.60 | 27.6 | 3.87 |
| | 0.0 | 18.4 | 2.13 | 19.9 | 2.50 | 21.5 | 2.80 | 23.0 | 3.14 | 24.5 | 3.41 | 26.1 | 3.72 | 27.6 | 4.02 |
| | 5.0 | 18.4 | 2.20 | 19.9 | 2.56 | 21.5 | 2.87 | 23.0 | 3.20 | 24.5 | 3.54 | 26.1 | 3.84 | 27.6 | 4.15 |
| | 10.0 | 18.4 | 2.35 | 19.9 | 2.62 | 21.5 | 2.93 | 23.0 | 3.23 | 24.5 | 3.66 | 26.1 | 4.02 | 27.6 | 4.45 |
| | 15.0 | 18.4 | 2.53 | 19.9 | 2.80 | 21.5 | 3.11 | 23.0 | 3.35 | 24.5 | 3.84 | 26.1 | 4.39 | 27.6 | 4.88 |
| | 20.0 | 18.4 | 2.74 | 19.9 | 3.05 | 21.5 | 3.29 | 23.0 | 3.60 | 24.5 | 4.21 | 26.1 | 4.88 | 27.6 | 5.49 |
| | 25.0 | 18.4 | 3.17 | 19.9 | 3.48 | 21.5 | 3.78 | 23.0 | 4.09 | 24.5 | 4.76 | 26.1 | 5.67 | 27.2 | 5.84 |
| | 30.0 | 18.4 | 3.66 | 19.9 | 4.02 | 21.5 | 4.45 | 23.0 | 4.82 | 24.5 | 5.85 | 25.3 | 5.98 | 26.3 | 6.20 |
| | 35.0 | 18.4 | 4.33 | 19.9 | 4.94 | 21.5 | 5.49 | 23.0 | 6.10 | 23.5 | 6.28 | 24.2 | 6.40 | 25.2 | 6.56 |
| | 40.0 | 18.4 | 5.37 | 19.9 | 5.98 | 21.5 | 6.28 | 21.9 | 6.40 | 22.3 | 6.59 | 22.9 | 6.77 | 23.9 | 6.92 |
| | 43.0 | 18.4 | 6.22 | 19.9 | 6.34 | 20.3 | 6.46 | 20.7 | 6.59 | 21.4 | 6.77 | 22.1 | 6.95 | 23.0 | 7.13 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 100% | -5.0 | 17.9 | 2.04 | 19.4 | 2.40 | 20.9 | 2.70 | 22.4 | 3.05 | 23.9 | 3.29 | 25.4 | 3.53 | 26.9 | 3.80 |
| | 0.0 | 17.9 | 2.10 | 19.4 | 2.46 | 20.9 | 2.76 | 22.4 | 3.08 | 23.9 | 3.35 | 25.4 | 3.65 | 26.9 | 3.95 |
| | 5.0 | 17.9 | 2.16 | 19.4 | 2.52 | 20.9 | 2.82 | 22.4 | 3.14 | 23.9 | 3.47 | 25.4 | 3.77 | 26.9 | 4.07 |
| | 10.0 | 17.9 | 2.31 | 19.4 | 2.58 | 20.9 | 2.88 | 22.4 | 3.17 | 23.9 | 3.59 | 25.4 | 3.95 | 26.9 | 4.37 |
| | 15.0 | 17.9 | 2.49 | 19.4 | 2.76 | 20.9 | 3.05 | 22.4 | 3.29 | 23.9 | 3.77 | 25.4 | 4.31 | 26.9 | 4.79 |
| | 20.0 | 17.9 | 2.70 | 19.4 | 3.00 | 20.9 | 3.23 | 22.4 | 3.53 | 23.9 | 4.13 | 25.4 | 4.79 | 26.9 | 5.39 |
| | 25.0 | 17.9 | 3.11 | 19.4 | 3.41 | 20.9 | 3.71 | 22.4 | 4.01 | 23.9 | 4.67 | 25.4 | 5.57 | 26.4 | 5.74 |
| | 30.0 | 17.9 | 3.59 | 19.4 | 3.95 | 20.9 | 4.37 | 22.4 | 4.73 | 23.9 | 5.75 | 24.6 | 5.87 | 25.5 | 6.09 |
| | 35.0 | 17.9 | 4.25 | 19.4 | 4.85 | 20.9 | 5.39 | 22.4 | 5.99 | 22.8 | 6.17 | 23.5 | 6.29 | 24.5 | 6.45 |
| | 40.0 | 17.9 | 5.27 | 19.4 | 5.87 | 20.9 | 6.17 | 21.3 | 6.29 | 21.7 | 6.47 | 22.3 | 6.65 | 23.3 | 6.80 |
| | 43.0 | 17.9 | 6.11 | 19.4 | 6.23 | 19.7 | 6.35 | 20.2 | 6.47 | 20.8 | 6.65 | 21.5 | 6.83 | 22.4 | 7.01 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 90% | -5.0 | 16.1 | 1.79 | 17.5 | 2.11 | 18.8 | 2.37 | 20.2 | 2.69 | 21.5 | 2.90 | 22.8 | 3.11 | 24.2 | 3.35 |
| | 0.0 | 16.1 | 1.84 | 17.5 | 2.16 | 18.8 | 2.42 | 20.2 | 2.71 | 21.5 | 2.95 | 22.8 | 3.22 | 24.2 | 3.48 |
| | 5.0 | 16.1 | 1.90 | 17.5 | 2.21 | 18.8 | 2.48 | 20.2 | 2.77 | 21.5 | 3.06 | 22.8 | 3.32 | 24.2 | 3.58 |
| | 10.0 | 16.1 | 2.03 | 17.5 | 2.27 | 18.8 | 2.53 | 20.2 | 2.79 | 21.5 | 3.16 | 22.8 | 3.48 | 24.2 | 3.85 |
| | 15.0 | 16.1 | 2.19 | 17.5 | 2.42 | 18.8 | 2.69 | 20.2 | 2.90 | 21.5 | 3.32 | 22.8 | 3.80 | 24.2 | 4.22 |
| | 20.0 | 16.1 | 2.37 | 17.5 | 2.64 | 18.8 | 2.85 | 20.2 | 3.11 | 21.5 | 3.64 | 22.8 | 4.22 | 24.2 | 4.74 |
| | 25.0 | 16.1 | 2.74 | 17.5 | 3.00 | 18.8 | 3.27 | 20.2 | 3.53 | 21.5 | 4.11 | 22.8 | 4.90 | 23.8 | 5.05 |
| | 30.0 | 16.1 | 3.16 | 17.5 | 3.48 | 18.8 | 3.85 | 20.2 | 4.16 | 21.5 | 5.06 | 22.2 | 5.17 | 23.0 | 5.36 |
| | 35.0 | 16.1 | 3.74 | 17.5 | 4.27 | 18.8 | 4.74 | 20.2 | 5.27 | 20.6 | 5.43 | 21.2 | 5.53 | 22.1 | 5.67 |
| | 40.0 | 16.1 | 4.64 | 17.5 | 5.17 | 18.8 | 5.43 | 19.2 | 5.53 | 19.6 | 5.69 | 20.1 | 5.85 | 21.0 | 5.98 |
| | 43.0 | 16.1 | 5.38 | 17.5 | 5.48 | 17.7 | 5.59 | 18.1 | 5.69 | 18.7 | 5.85 | 19.4 | 6.01 | 20.2 | 6.17 |

# 1. SPW-C0705DXHN8 (Cooling)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 80% | -5.0 | 14.3 | 1.53 | 15.5 | 1.80 | 16.7 | 2.02 | 17.9 | 2.29 | 19.1 | 2.47 | 20.3 | 2.65 | 21.5 | 2.85 |
| | 0.0 | 14.3 | 1.57 | 15.5 | 1.84 | 16.7 | 2.07 | 17.9 | 2.31 | 19.1 | 2.52 | 20.3 | 2.74 | 21.5 | 2.97 |
| | 5.0 | 14.3 | 1.62 | 15.5 | 1.89 | 16.7 | 2.11 | 17.9 | 2.36 | 19.1 | 2.61 | 20.3 | 2.83 | 21.5 | 3.05 |
| | 10.0 | 14.3 | 1.73 | 15.5 | 1.93 | 16.7 | 2.16 | 17.9 | 2.38 | 19.1 | 2.70 | 20.3 | 2.97 | 21.5 | 3.28 |
| | 15.0 | 14.3 | 1.86 | 15.5 | 2.07 | 16.7 | 2.29 | 17.9 | 2.47 | 19.1 | 2.83 | 20.3 | 3.23 | 21.5 | 3.59 |
| | 20.0 | 14.3 | 2.02 | 15.5 | 2.25 | 16.7 | 2.43 | 17.9 | 2.65 | 19.1 | 3.10 | 20.3 | 3.59 | 21.5 | 4.04 |
| | 25.0 | 14.3 | 2.34 | 15.5 | 2.56 | 16.7 | 2.79 | 17.9 | 3.01 | 19.1 | 3.50 | 20.3 | 4.18 | 21.1 | 4.30 |
| | 30.0 | 14.3 | 2.70 | 15.5 | 2.97 | 16.7 | 3.28 | 17.9 | 3.55 | 19.1 | 4.31 | 19.7 | 4.40 | 20.4 | 4.57 |
| | 35.0 | 14.3 | 3.19 | 15.5 | 3.64 | 16.7 | 4.04 | 17.9 | 4.49 | 18.3 | 4.63 | 18.8 | 4.72 | 19.6 | 4.83 |
| | 40.0 | 14.3 | 3.95 | 15.5 | 4.40 | 16.7 | 4.63 | 17.0 | 4.72 | 17.4 | 4.85 | 17.8 | 4.99 | 18.6 | 5.10 |
| | 43.0 | 14.3 | 4.58 | 15.5 | 4.67 | 15.8 | 4.76 | 16.1 | 4.85 | 16.7 | 4.99 | 17.2 | 5.12 | 17.9 | 5.26 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 70% | -5.0 | 12.5 | 1.28 | 13.6 | 1.51 | 14.6 | 1.70 | 15.7 | 1.92 | 16.7 | 2.08 | 17.8 | 2.23 | 18.8 | 2.40 |
| | 0.0 | 12.5 | 1.32 | 13.6 | 1.55 | 14.6 | 1.74 | 15.7 | 1.94 | 16.7 | 2.11 | 17.8 | 2.30 | 18.8 | 2.49 |
| | 5.0 | 12.5 | 1.36 | 13.6 | 1.58 | 14.6 | 1.77 | 15.7 | 1.98 | 16.7 | 2.19 | 17.8 | 2.38 | 18.8 | 2.57 |
| | 10.0 | 12.5 | 1.45 | 13.6 | 1.62 | 14.6 | 1.81 | 15.7 | 2.00 | 16.7 | 2.26 | 17.8 | 2.49 | 18.8 | 2.75 |
| | 15.0 | 12.5 | 1.57 | 13.6 | 1.74 | 14.6 | 1.92 | 15.7 | 2.08 | 16.7 | 2.38 | 17.8 | 2.72 | 18.8 | 3.02 |
| | 20.0 | 12.5 | 1.70 | 13.6 | 1.89 | 14.6 | 2.04 | 15.7 | 2.23 | 16.7 | 2.60 | 17.8 | 3.02 | 18.8 | 3.40 |
| | 25.0 | 12.5 | 1.96 | 13.6 | 2.15 | 14.6 | 2.34 | 15.7 | 2.53 | 16.7 | 2.94 | 17.8 | 3.51 | 18.5 | 3.62 |
| | 30.0 | 12.5 | 2.26 | 13.6 | 2.49 | 14.6 | 2.75 | 15.7 | 2.98 | 16.7 | 3.62 | 17.2 | 3.70 | 17.9 | 3.84 |
| | 35.0 | 12.5 | 2.68 | 13.6 | 3.06 | 14.6 | 3.40 | 15.7 | 3.77 | 16.0 | 3.89 | 16.5 | 3.96 | 17.2 | 4.06 |
| | 40.0 | 12.5 | 3.32 | 13.6 | 3.70 | 14.6 | 3.89 | 14.9 | 3.96 | 15.2 | 4.08 | 15.6 | 4.19 | 16.3 | 4.28 |
| | 43.0 | 12.5 | 3.85 | 13.6 | 3.92 | 13.8 | 4.00 | 14.1 | 4.08 | 14.6 | 4.19 | 15.1 | 4.30 | 15.7 | 4.42 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 60% | -5.0 | 10.8 | 1.04 | 11.6 | 1.22 | 12.5 | 1.37 | 13.4 | 1.56 | 14.3 | 1.68 | 15.2 | 1.80 | 16.1 | 1.94 |
| | 0.0 | 10.8 | 1.07 | 11.6 | 1.25 | 12.5 | 1.41 | 13.4 | 1.57 | 14.3 | 1.71 | 15.2 | 1.86 | 16.1 | 2.02 |
| | 5.0 | 10.8 | 1.10 | 11.6 | 1.28 | 12.5 | 1.44 | 13.4 | 1.60 | 14.3 | 1.77 | 15.2 | 1.92 | 16.1 | 2.08 |
| | 10.0 | 10.8 | 1.18 | 11.6 | 1.31 | 12.5 | 1.47 | 13.4 | 1.62 | 14.3 | 1.83 | 15.2 | 2.02 | 16.1 | 2.23 |
| | 15.0 | 10.8 | 1.27 | 11.6 | 1.41 | 12.5 | 1.56 | 13.4 | 1.68 | 14.3 | 1.92 | 15.2 | 2.20 | 16.1 | 2.44 |
| | 20.0 | 10.8 | 1.37 | 11.6 | 1.53 | 12.5 | 1.65 | 13.4 | 1.80 | 14.3 | 2.11 | 15.2 | 2.44 | 16.1 | 2.75 |
| | 25.0 | 10.8 | 1.59 | 11.6 | 1.74 | 12.5 | 1.89 | 13.4 | 2.05 | 14.3 | 2.38 | 15.2 | 2.84 | 15.9 | 2.93 |
| | 30.0 | 10.8 | 1.83 | 11.6 | 2.02 | 12.5 | 2.23 | 13.4 | 2.41 | 14.3 | 2.93 | 14.8 | 2.99 | 15.3 | 3.11 |
| | 35.0 | 10.8 | 2.17 | 11.6 | 2.47 | 12.5 | 2.75 | 13.4 | 3.05 | 13.7 | 3.15 | 14.1 | 3.21 | 14.7 | 3.29 |
| | 40.0 | 10.8 | 2.69 | 11.6 | 2.99 | 12.5 | 3.15 | 12.8 | 3.21 | 13.0 | 3.30 | 13.4 | 3.39 | 14.0 | 3.47 |
| | 43.0 | 10.8 | 3.12 | 11.6 | 3.18 | 11.8 | 3.24 | 12.1 | 3.30 | 12.5 | 3.39 | 12.9 | 3.48 | 13.4 | 3.57 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 50% | -5.0 | 9.0 | 0.79 | 9.7 | 0.93 | 10.4 | 1.05 | 11.2 | 1.19 | 11.9 | 1.28 | 12.7 | 1.38 | 13.4 | 1.48 |
| | 0.0 | 9.0 | 0.82 | 9.7 | 0.96 | 10.4 | 1.07 | 11.2 | 1.20 | 11.9 | 1.31 | 12.7 | 1.43 | 13.4 | 1.54 |
| | 5.0 | 9.0 | 0.84 | 9.7 | 0.98 | 10.4 | 1.10 | 11.2 | 1.23 | 11.9 | 1.35 | 12.7 | 1.47 | 13.4 | 1.59 |
| | 10.0 | 9.0 | 0.90 | 9.7 | 1.00 | 10.4 | 1.12 | 11.2 | 1.24 | 11.9 | 1.40 | 12.7 | 1.54 | 13.4 | 1.71 |
| | 15.0 | 9.0 | 0.97 | 9.7 | 1.07 | 10.4 | 1.19 | 11.2 | 1.28 | 11.9 | 1.47 | 12.7 | 1.68 | 13.4 | 1.87 |
| | 20.0 | 9.0 | 1.05 | 9.7 | 1.17 | 10.4 | 1.26 | 11.2 | 1.38 | 11.9 | 1.61 | 12.7 | 1.87 | 13.4 | 2.10 |
| | 25.0 | 9.0 | 1.21 | 9.7 | 1.33 | 10.4 | 1.45 | 11.2 | 1.57 | 11.9 | 1.82 | 12.7 | 2.17 | 13.2 | 2.24 |
| | 30.0 | 9.0 | 1.40 | 9.7 | 1.54 | 10.4 | 1.71 | 11.2 | 1.85 | 11.9 | 2.24 | 12.3 | 2.29 | 12.8 | 2.38 |
| | 35.0 | 9.0 | 1.66 | 9.7 | 1.89 | 10.4 | 2.10 | 11.2 | 2.34 | 11.4 | 2.41 | 11.8 | 2.45 | 12.3 | 2.51 |
| | 40.0 | 9.0 | 2.06 | 9.7 | 2.29 | 10.4 | 2.41 | 10.6 | 2.45 | 10.9 | 2.52 | 11.1 | 2.59 | 11.6 | 2.65 |
| | 43.0 | 9.0 | 2.38 | 9.7 | 2.43 | 9.9 | 2.48 | 10.1 | 2.52 | 10.4 | 2.59 | 10.8 | 2.66 | 11.2 | 2.73 |

# 2. SPW-C0705DXHN8 (Heating)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 130% | -19.8 | -20.0 | 16.7 | 4.96 | 16.0 | 4.85 | 15.3 | 4.75 | 14.9 | 4.70 | 14.6 | 4.65 | 13.8 | 4.55 | 13.1 | 4.45 |
| | -14.7 | -15.0 | 19.1 | 5.25 | 18.4 | 5.15 | 17.7 | 5.05 | 17.3 | 5.00 | 16.9 | 4.95 | 16.2 | 4.85 | 15.5 | 4.75 |
| | -9.6 | -10.0 | 21.5 | 5.55 | 20.8 | 5.45 | 20.1 | 5.35 | 19.7 | 5.30 | 19.3 | 5.25 | 18.6 | 5.14 | 17.9 | 5.04 |
| | -4.4 | -5.0 | 23.9 | 5.85 | 23.2 | 5.75 | 22.5 | 5.65 | 22.1 | 5.59 | 21.7 | 5.54 | 21.0 | 5.44 | 20.3 | 5.34 |
| | -1.8 | -2.5 | 25.1 | 6.00 | 24.4 | 5.90 | 23.7 | 5.79 | 23.3 | 5.74 | 22.9 | 5.69 | 22.2 | 5.59 | 21.5 | 5.49 |
| | 0.8 | 0.0 | 26.3 | 6.15 | 25.6 | 6.04 | 24.9 | 5.94 | 24.5 | 5.89 | 24.1 | 5.84 | 23.4 | 5.74 | 22.4 | 5.64 |
| | 2.8 | 2.0 | 27.3 | 6.27 | 26.5 | 6.16 | 25.8 | 6.06 | 25.5 | 6.01 | 25.1 | 5.96 | 24.2 | 5.86 | 22.4 | 5.39 |
| | 6.0 | 5.0 | 28.7 | 6.44 | 28.0 | 6.34 | 27.3 | 6.24 | 26.9 | 6.19 | 26.0 | 6.12 | 24.2 | 5.57 | 22.4 | 5.01 |
| | 7.0 | 6.0 | 29.2 | 6.50 | 28.5 | 6.40 | 27.8 | 6.30 | 27.0 | 6.27 | 26.0 | 5.99 | 24.2 | 5.44 | 22.4 | 4.89 |
| | 8.6 | 7.5 | 29.9 | 6.59 | 29.2 | 6.49 | 27.9 | 6.36 | 27.0 | 6.08 | 26.0 | 5.80 | 24.2 | 5.25 | 22.4 | 4.70 |
| | 11.2 | 10.0 | 31.1 | 6.74 | 29.7 | 6.59 | 27.9 | 6.04 | 27.0 | 5.77 | 26.0 | 5.49 | 24.2 | 4.94 | 22.4 | 4.39 |
| | 16.4 | 15.0 | 31.5 | 6.52 | 29.7 | 5.97 | 27.9 | 5.42 | 27.0 | 5.14 | 26.0 | 4.86 | 24.2 | 4.31 | 22.4 | 3.76 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 120% | -19.8 | -20.0 | 16.3 | 4.93 | 15.6 | 4.83 | 14.9 | 4.73 | 14.5 | 4.68 | 14.2 | 4.63 | 13.5 | 4.53 | 12.8 | 4.43 |
| | -14.7 | -15.0 | 18.6 | 5.23 | 17.9 | 5.13 | 17.2 | 5.03 | 16.9 | 4.97 | 16.5 | 4.92 | 15.8 | 4.82 | 15.1 | 4.72 |
| | -9.6 | -10.0 | 20.9 | 5.52 | 20.2 | 5.42 | 19.5 | 5.32 | 19.2 | 5.27 | 18.8 | 5.22 | 18.1 | 5.12 | 17.4 | 5.02 |
| | -4.4 | -5.0 | 23.3 | 5.82 | 22.6 | 5.72 | 21.9 | 5.62 | 21.5 | 5.57 | 21.2 | 5.52 | 20.5 | 5.42 | 19.8 | 5.31 |
| | -1.8 | -2.5 | 24.4 | 5.97 | 23.7 | 5.87 | 23.0 | 5.77 | 22.7 | 5.72 | 22.3 | 5.66 | 21.6 | 5.56 | 20.9 | 5.46 |
| | 0.8 | 0.0 | 25.6 | 6.12 | 24.9 | 6.02 | 24.2 | 5.91 | 23.9 | 5.86 | 23.5 | 5.81 | 22.8 | 5.71 | 21.8 | 5.61 |
| | 2.8 | 2.0 | 26.6 | 6.23 | 25.9 | 6.13 | 25.2 | 6.03 | 24.8 | 5.98 | 24.5 | 5.93 | 23.6 | 5.83 | 21.8 | 5.36 |
| | 6.0 | 5.0 | 28.0 | 6.41 | 27.3 | 6.31 | 26.6 | 6.21 | 26.2 | 6.16 | 25.4 | 6.09 | 23.6 | 5.54 | 21.8 | 4.99 |
| | 7.0 | 6.0 | 28.4 | 6.47 | 27.7 | 6.37 | 27.0 | 6.27 | 26.3 | 6.24 | 25.4 | 5.96 | 23.6 | 5.41 | 21.8 | 4.87 |
| | 8.6 | 7.5 | 29.2 | 6.56 | 28.5 | 6.46 | 27.1 | 6.33 | 26.3 | 6.05 | 25.4 | 5.78 | 23.6 | 5.23 | 21.8 | 4.68 |
| | 11.2 | 10.0 | 30.3 | 6.71 | 28.9 | 6.56 | 27.1 | 6.01 | 26.3 | 5.74 | 25.4 | 5.46 | 23.6 | 4.92 | 21.8 | 4.37 |
| | 16.4 | 15.0 | 30.7 | 6.49 | 28.9 | 5.94 | 27.1 | 5.39 | 26.3 | 5.12 | 25.4 | 4.84 | 23.6 | 4.29 | 21.8 | 3.74 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 110% | -19.8 | -20.0 | 15.9 | 4.91 | 15.3 | 4.81 | 14.6 | 4.71 | 14.2 | 4.66 | 13.9 | 4.60 | 13.2 | 4.50 | 12.5 | 4.40 |
| | -14.7 | -15.0 | 18.2 | 5.20 | 17.5 | 5.10 | 16.8 | 5.00 | 16.5 | 4.95 | 16.2 | 4.90 | 15.5 | 4.80 | 14.8 | 4.70 |
| | -9.6 | -10.0 | 20.5 | 5.50 | 19.8 | 5.40 | 19.1 | 5.30 | 18.8 | 5.24 | 18.4 | 5.19 | 17.8 | 5.09 | 17.1 | 4.99 |
| | -4.4 | -5.0 | 22.8 | 5.79 | 22.1 | 5.69 | 21.4 | 5.59 | 21.1 | 5.54 | 20.7 | 5.49 | 20.0 | 5.39 | 19.4 | 5.29 |
| | -1.8 | -2.5 | 23.9 | 5.94 | 23.2 | 5.84 | 22.6 | 5.74 | 22.2 | 5.69 | 21.9 | 5.64 | 21.2 | 5.54 | 20.5 | 5.44 |
| | 0.8 | 0.0 | 25.1 | 6.09 | 24.4 | 5.99 | 23.7 | 5.88 | 23.4 | 5.83 | 23.0 | 5.78 | 22.3 | 5.68 | 21.3 | 5.58 |
| | 2.8 | 2.0 | 26.0 | 6.20 | 25.3 | 6.10 | 24.6 | 6.00 | 24.3 | 5.95 | 23.9 | 5.90 | 23.1 | 5.80 | 21.3 | 5.34 |
| | 6.0 | 5.0 | 27.4 | 6.38 | 26.7 | 6.28 | 26.0 | 6.18 | 25.7 | 6.13 | 24.8 | 6.06 | 23.1 | 5.51 | 21.3 | 4.97 |
| | 7.0 | 6.0 | 27.8 | 6.44 | 27.2 | 6.34 | 26.5 | 6.24 | 25.7 | 6.21 | 24.8 | 5.93 | 23.1 | 5.39 | 21.3 | 4.84 |
| | 8.6 | 7.5 | 28.5 | 6.53 | 27.9 | 6.43 | 26.6 | 6.29 | 25.7 | 6.02 | 24.8 | 5.75 | 23.1 | 5.20 | 21.3 | 4.66 |
| | 11.2 | 10.0 | 29.7 | 6.68 | 28.3 | 6.53 | 26.6 | 5.98 | 25.7 | 5.71 | 24.8 | 5.44 | 23.1 | 4.89 | 21.3 | 4.34 |
| | 16.4 | 15.0 | 30.1 | 6.46 | 28.3 | 5.91 | 26.6 | 5.36 | 25.7 | 5.09 | 24.8 | 4.82 | 23.1 | 4.27 | 21.3 | 3.72 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 100% | -19.8 | -20.0 | 15.5 | 4.88 | 14.8 | 4.78 | 14.2 | 4.68 | 13.8 | 4.63 | 13.5 | 4.58 | 12.8 | 4.48 | 12.2 | 4.38 |
| | -14.7 | -15.0 | 17.7 | 5.17 | 17.0 | 5.07 | 16.4 | 4.97 | 16.1 | 4.92 | 15.7 | 4.87 | 15.1 | 4.77 | 14.4 | 4.67 |
| | -9.6 | -10.0 | 19.9 | 5.46 | 19.3 | 5.36 | 18.6 | 5.26 | 18.3 | 5.21 | 17.9 | 5.16 | 17.3 | 5.06 | 16.6 | 4.96 |
| | -4.4 | -5.0 | 22.2 | 5.76 | 21.5 | 5.66 | 20.8 | 5.56 | 20.5 | 5.51 | 20.2 | 5.46 | 19.5 | 5.36 | 18.8 | 5.26 |
| | -1.8 | -2.5 | 23.3 | 5.90 | 22.6 | 5.80 | 21.9 | 5.70 | 21.6 | 5.65 | 21.3 | 5.60 | 20.6 | 5.50 | 20.0 | 5.40 |
| | 0.8 | 0.0 | 24.4 | 6.05 | 23.7 | 5.95 | 23.1 | 5.85 | 22.7 | 5.80 | 22.4 | 5.75 | 21.7 | 5.65 | 20.8 | 5.55 |
| | 2.8 | 2.0 | 25.3 | 6.17 | 24.6 | 6.07 | 24.0 | 5.97 | 23.6 | 5.92 | 23.3 | 5.87 | 22.5 | 5.77 | 20.8 | 5.31 |
| | 6.0 | 5.0 | 26.6 | 6.34 | 26.0 | 6.24 | 25.3 | 6.14 | 25.0 | 6.09 | 24.2 | 6.02 | 22.5 | 5.48 | 20.8 | 4.94 |
| | 7.0 | 6.0 | 27.1 | 6.40 | 26.4 | 6.30 | 25.8 | 6.20 | 25.0 | 6.17 | 24.2 | 5.90 | 22.5 | 5.36 | 20.8 | 4.81 |
| | 8.6 | 7.5 | 27.8 | 6.49 | 27.1 | 6.39 | 25.9 | 6.26 | 25.0 | 5.98 | 24.2 | 5.71 | 22.5 | 5.17 | 20.8 | 4.63 |
| | 11.2 | 10.0 | 28.9 | 6.64 | 27.6 | 6.49 | 25.9 | 5.95 | 25.0 | 5.68 | 24.2 | 5.40 | 22.5 | 4.86 | 20.8 | 4.32 |
| | 16.4 | 15.0 | 29.3 | 6.42 | 27.6 | 5.87 | 25.9 | 5.33 | 25.0 | 5.06 | 24.2 | 4.79 | 22.5 | 4.24 | 20.8 | 3.70 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 90% | -19.8 | -20.0 | 14.0 | 4.39 | 13.4 | 4.30 | 12.8 | 4.21 | 12.5 | 4.16 | 12.2 | 4.12 | 11.6 | 4.03 | 11.0 | 3.94 |
| | -14.7 | -15.0 | 15.9 | 4.65 | 15.3 | 4.56 | 14.7 | 4.47 | 14.4 | 4.43 | 14.1 | 4.38 | 13.5 | 4.29 | 12.9 | 4.20 |
| | -9.6 | -10.0 | 17.9 | 4.92 | 17.3 | 4.83 | 16.7 | 4.74 | 16.4 | 4.69 | 16.1 | 4.65 | 15.5 | 4.56 | 14.9 | 4.47 |
| | -4.4 | -5.0 | 19.9 | 5.18 | 19.3 | 5.09 | 18.7 | 5.00 | 18.4 | 4.96 | 18.1 | 4.91 | 17.5 | 4.82 | 17.0 | 4.73 |
| | -1.8 | -2.5 | 20.9 | 5.31 | 20.3 | 5.22 | 19.8 | 5.13 | 19.5 | 5.09 | 19.2 | 5.04 | 18.6 | 4.95 | 18.0 | 4.86 |
| | 0.8 | 0.0 | 22.0 | 5.44 | 21.4 | 5.35 | 20.8 | 5.26 | 20.5 | 5.22 | 20.2 | 5.17 | 19.6 | 5.08 | 18.7 | 4.99 |
| | 2.8 | 2.0 | 22.8 | 5.55 | 22.2 | 5.46 | 21.6 | 5.37 | 21.3 | 5.33 | 21.0 | 5.28 | 20.2 | 5.19 | 18.7 | 4.78 |
| | 6.0 | 5.0 | 24.0 | 5.71 | 23.4 | 5.62 | 22.8 | 5.53 | 22.5 | 5.48 | 21.7 | 5.42 | 20.2 | 4.93 | 18.7 | 4.44 |
| | 7.0 | 6.0 | 24.4 | 5.76 | 23.8 | 5.67 | 23.2 | 5.58 | 22.5 | 5.55 | 21.7 | 5.31 | 20.2 | 4.82 | 18.7 | 4.33 |
| | 8.6 | 7.5 | 25.0 | 5.84 | 24.4 | 5.75 | 23.3 | 5.63 | 22.5 | 5.39 | 21.7 | 5.14 | 20.2 | 4.65 | 18.7 | 4.16 |
| | 11.2 | 10.0 | 26.0 | 5.97 | 24.8 | 5.84 | 23.3 | 5.35 | 22.5 | 5.11 | 21.7 | 4.86 | 20.2 | 4.38 | 18.7 | 3.89 |
| | 16.4 | 15.0 | 26.3 | 5.78 | 24.8 | 5.29 | 23.3 | 4.80 | 22.5 | 4.55 | 21.7 | 4.31 | 20.2 | 3.82 | 18.7 | 3.33 |

# 2. SPW-C0705DXHN8 (Heating)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 80% | -19.8 | -20.0 | 12.4 | 3.85 | 11.9 | 3.77 | 11.3 | 3.70 | 11.1 | 3.66 | 10.8 | 3.62 | 10.3 | 3.54 | 9.7 | 3.46 |
| | -14.7 | -15.0 | 14.2 | 4.08 | 13.6 | 4.01 | 13.1 | 3.93 | 12.8 | 3.89 | 12.6 | 3.85 | 12.0 | 3.77 | 11.5 | 3.69 |
| | -9.6 | -10.0 | 15.9 | 4.32 | 15.4 | 4.24 | 14.9 | 4.16 | 14.6 | 4.12 | 14.3 | 4.08 | 13.8 | 4.00 | 13.3 | 3.92 |
| | -4.4 | -5.0 | 17.7 | 4.55 | 17.2 | 4.47 | 16.7 | 4.39 | 16.4 | 4.35 | 16.1 | 4.31 | 15.6 | 4.23 | 15.1 | 4.15 |
| | -1.8 | -2.5 | 18.6 | 4.66 | 18.1 | 4.58 | 17.6 | 4.51 | 17.3 | 4.47 | 17.0 | 4.43 | 16.5 | 4.35 | 16.0 | 4.27 |
| | 0.8 | 0.0 | 19.5 | 4.78 | 19.0 | 4.70 | 18.5 | 4.62 | 18.2 | 4.58 | 17.9 | 4.54 | 17.4 | 4.46 | 16.6 | 4.38 |
| | 2.8 | 2.0 | 20.2 | 4.87 | 19.7 | 4.79 | 19.2 | 4.71 | 18.9 | 4.67 | 18.6 | 4.63 | 18.0 | 4.56 | 16.6 | 4.19 |
| | 6.0 | 5.0 | 21.3 | 5.01 | 20.8 | 4.93 | 20.2 | 4.85 | 20.0 | 4.81 | 19.3 | 4.76 | 18.0 | 4.33 | 16.6 | 3.90 |
| | 7.0 | 6.0 | 21.7 | 5.06 | 21.1 | 4.98 | 20.6 | 4.90 | 20.0 | 4.87 | 19.3 | 4.66 | 18.0 | 4.23 | 16.6 | 3.80 |
| | 8.6 | 7.5 | 22.2 | 5.13 | 21.7 | 5.05 | 20.7 | 4.94 | 20.0 | 4.73 | 19.3 | 4.51 | 18.0 | 4.08 | 16.6 | 3.66 |
| | 11.2 | 10.0 | 23.1 | 5.24 | 22.0 | 5.13 | 20.7 | 4.70 | 20.0 | 4.48 | 19.3 | 4.27 | 18.0 | 3.84 | 16.6 | 3.41 |
| | 16.4 | 15.0 | 23.4 | 5.07 | 22.0 | 4.64 | 20.7 | 4.21 | 20.0 | 4.00 | 19.3 | 3.78 | 18.0 | 3.35 | 16.6 | 2.92 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 70% | -19.8 | -20.0 | 10.9 | 3.32 | 10.4 | 3.25 | 9.9 | 3.18 | 9.7 | 3.15 | 9.5 | 3.11 | 9.0 | 3.04 | 8.5 | 2.98 |
| | -14.7 | -15.0 | 12.4 | 3.52 | 11.9 | 3.45 | 11.5 | 3.38 | 11.2 | 3.35 | 11.0 | 3.31 | 10.5 | 3.24 | 10.1 | 3.18 |
| | -9.6 | -10.0 | 14.0 | 3.72 | 13.5 | 3.65 | 13.0 | 3.58 | 12.8 | 3.55 | 12.6 | 3.51 | 12.1 | 3.44 | 11.6 | 3.38 |
| | -4.4 | -5.0 | 15.5 | 3.91 | 15.0 | 3.85 | 14.6 | 3.78 | 14.3 | 3.74 | 14.1 | 3.71 | 13.6 | 3.64 | 13.2 | 3.57 |
| | -1.8 | -2.5 | 16.3 | 4.01 | 15.8 | 3.95 | 15.4 | 3.88 | 15.1 | 3.84 | 14.9 | 3.81 | 14.4 | 3.74 | 14.0 | 3.67 |
| | 0.8 | 0.0 | 17.1 | 4.11 | 16.6 | 4.05 | 16.1 | 3.98 | 15.9 | 3.94 | 15.7 | 3.91 | 15.2 | 3.84 | 14.5 | 3.77 |
| | 2.8 | 2.0 | 17.7 | 4.19 | 17.2 | 4.13 | 16.8 | 4.06 | 16.5 | 4.02 | 16.3 | 3.99 | 15.7 | 3.92 | 14.5 | 3.61 |
| | 6.0 | 5.0 | 18.6 | 4.31 | 18.2 | 4.25 | 17.7 | 4.18 | 17.5 | 4.14 | 16.9 | 4.09 | 15.7 | 3.73 | 14.5 | 3.36 |
| | 7.0 | 6.0 | 19.0 | 4.35 | 18.5 | 4.28 | 18.0 | 4.22 | 17.5 | 4.20 | 16.9 | 4.01 | 15.7 | 3.64 | 14.5 | 3.27 |
| | 8.6 | 7.5 | 19.4 | 4.41 | 19.0 | 4.34 | 18.1 | 4.25 | 17.5 | 4.07 | 16.9 | 3.89 | 15.7 | 3.52 | 14.5 | 3.15 |
| | 11.2 | 10.0 | 20.2 | 4.51 | 19.3 | 4.41 | 18.1 | 4.04 | 17.5 | 3.86 | 16.9 | 3.68 | 15.7 | 3.31 | 14.5 | 2.94 |
| | 16.4 | 15.0 | 20.5 | 4.36 | 19.3 | 3.99 | 18.1 | 3.62 | 17.5 | 3.44 | 16.9 | 3.26 | 15.7 | 2.89 | 14.5 | 2.52 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 60% | -19.8 | -20.0 | 9.3 | 2.83 | 8.9 | 2.77 | 8.5 | 2.71 | 8.3 | 2.68 | 8.1 | 2.65 | 7.7 | 2.60 | 7.3 | 2.54 |
| | -14.7 | -15.0 | 10.6 | 3.00 | 10.2 | 2.94 | 9.8 | 2.88 | 9.6 | 2.85 | 9.4 | 2.82 | 9.0 | 2.77 | 8.6 | 2.71 |
| | -9.6 | -10.0 | 12.0 | 3.17 | 11.6 | 3.11 | 11.2 | 3.05 | 11.0 | 3.02 | 10.8 | 2.99 | 10.4 | 2.94 | 10.0 | 2.88 |
| | -4.4 | -5.0 | 13.3 | 3.34 | 12.9 | 3.28 | 12.5 | 3.22 | 12.3 | 3.19 | 12.1 | 3.16 | 11.7 | 3.11 | 11.3 | 3.05 |
| | -1.8 | -2.5 | 14.0 | 3.42 | 13.6 | 3.37 | 13.2 | 3.31 | 13.0 | 3.28 | 12.8 | 3.25 | 12.4 | 3.19 | 12.0 | 3.13 |
| | 0.8 | 0.0 | 14.6 | 3.51 | 14.2 | 3.45 | 13.8 | 3.39 | 13.6 | 3.36 | 13.4 | 3.33 | 13.0 | 3.28 | 12.5 | 3.22 |
| | 2.8 | 2.0 | 15.2 | 3.58 | 14.8 | 3.52 | 14.4 | 3.46 | 14.2 | 3.43 | 14.0 | 3.40 | 13.5 | 3.34 | 12.5 | 3.08 |
| | 6.0 | 5.0 | 16.0 | 3.68 | 15.6 | 3.62 | 15.2 | 3.56 | 15.0 | 3.53 | 14.5 | 3.49 | 13.5 | 3.18 | 12.5 | 2.86 |
| | 7.0 | 6.0 | 16.3 | 3.71 | 15.9 | 3.65 | 15.5 | 3.60 | 15.0 | 3.58 | 14.5 | 3.42 | 13.5 | 3.11 | 12.5 | 2.79 |
| | 8.6 | 7.5 | 16.7 | 3.76 | 16.3 | 3.71 | 15.5 | 3.63 | 15.0 | 3.47 | 14.5 | 3.31 | 13.5 | 3.00 | 12.5 | 2.68 |
| | 11.2 | 10.0 | 17.3 | 3.85 | 16.5 | 3.76 | 15.5 | 3.45 | 15.0 | 3.29 | 14.5 | 3.13 | 13.5 | 2.82 | 12.5 | 2.51 |
| | 16.4 | 15.0 | 17.6 | 3.72 | 16.5 | 3.41 | 15.5 | 3.09 | 15.0 | 2.93 | 14.5 | 2.78 | 13.5 | 2.46 | 12.5 | 2.15 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 50% | -19.8 | -20.0 | 7.8 | 2.29 | 7.4 | 2.25 | 7.1 | 2.20 | 6.9 | 2.17 | 6.8 | 2.15 | 6.4 | 2.10 | 6.1 | 2.06 |
| | -14.7 | -15.0 | 8.9 | 2.43 | 8.5 | 2.38 | 8.2 | 2.34 | 8.0 | 2.31 | 7.9 | 2.29 | 7.5 | 2.24 | 7.2 | 2.20 |
| | -9.6 | -10.0 | 10.0 | 2.57 | 9.6 | 2.52 | 9.3 | 2.47 | 9.1 | 2.45 | 9.0 | 2.43 | 8.6 | 2.38 | 8.3 | 2.33 |
| | -4.4 | -5.0 | 11.1 | 2.71 | 10.7 | 2.66 | 10.4 | 2.61 | 10.2 | 2.59 | 10.1 | 2.56 | 9.7 | 2.52 | 9.4 | 2.47 |
| | -1.8 | -2.5 | 11.6 | 2.77 | 11.3 | 2.73 | 11.0 | 2.68 | 10.8 | 2.66 | 10.6 | 2.63 | 10.3 | 2.59 | 10.0 | 2.54 |
| | 0.8 | 0.0 | 12.2 | 2.84 | 11.9 | 2.80 | 11.5 | 2.75 | 11.4 | 2.73 | 11.2 | 2.70 | 10.9 | 2.66 | 10.4 | 2.61 |
| | 2.8 | 2.0 | 12.6 | 2.90 | 12.3 | 2.85 | 12.0 | 2.80 | 11.8 | 2.78 | 11.6 | 2.76 | 11.2 | 2.71 | 10.4 | 2.49 |
| | 6.0 | 5.0 | 13.3 | 2.98 | 13.0 | 2.93 | 12.7 | 2.89 | 12.5 | 2.86 | 12.1 | 2.83 | 11.2 | 2.58 | 10.4 | 2.32 |
| | 7.0 | 6.0 | 13.5 | 3.01 | 13.2 | 2.96 | 12.9 | 2.91 | 12.5 | 2.90 | 12.1 | 2.77 | 11.2 | 2.52 | 10.4 | 2.26 |
| | 8.6 | 7.5 | 13.9 | 3.05 | 13.5 | 3.00 | 12.9 | 2.94 | 12.5 | 2.81 | 12.1 | 2.69 | 11.2 | 2.43 | 10.4 | 2.17 |
| | 11.2 | 10.0 | 14.4 | 3.12 | 13.8 | 3.05 | 12.9 | 2.80 | 12.5 | 2.67 | 12.1 | 2.54 | 11.2 | 2.29 | 10.4 | 2.03 |
| | 16.4 | 15.0 | 14.6 | 3.02 | 13.8 | 2.76 | 12.9 | 2.51 | 12.5 | 2.38 | 12.1 | 2.25 | 11.2 | 2.00 | 10.4 | 1.74 |

# 3. SPW-C0905DXHN8 (Cooing)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 130% | -5.0 | 24.1 | 2.83 | 26.1 | 3.33 | 28.2 | 3.75 | 30.2 | 4.25 | 32.2 | 4.58 | 34.2 | 4.91 | 36.2 | 5.29 |
| | 0.0 | 24.1 | 2.91 | 26.1 | 3.41 | 28.2 | 3.83 | 30.2 | 4.29 | 32.2 | 4.66 | 34.2 | 5.08 | 36.2 | 5.50 |
| | 5.0 | 24.1 | 3.00 | 26.1 | 3.50 | 28.2 | 3.91 | 30.2 | 4.37 | 32.2 | 4.83 | 34.2 | 5.25 | 36.2 | 5.66 |
| | 10.0 | 24.1 | 3.21 | 26.1 | 3.58 | 28.2 | 4.00 | 30.2 | 4.41 | 32.2 | 5.00 | 34.2 | 5.50 | 36.2 | 6.08 |
| | 15.0 | 24.1 | 3.46 | 26.1 | 3.83 | 28.2 | 4.25 | 30.2 | 4.58 | 32.2 | 5.25 | 34.2 | 6.00 | 36.2 | 6.66 |
| | 20.0 | 24.1 | 3.75 | 26.1 | 4.16 | 28.2 | 4.50 | 30.2 | 4.91 | 32.2 | 5.75 | 34.2 | 6.66 | 36.2 | 7.49 |
| | 25.0 | 24.1 | 4.33 | 26.1 | 4.75 | 28.2 | 5.16 | 30.2 | 5.58 | 32.2 | 6.49 | 34.2 | 7.74 | 35.6 | 7.98 |
| | 30.0 | 24.1 | 5.00 | 26.1 | 5.50 | 28.2 | 6.08 | 30.2 | 6.58 | 32.2 | 7.99 | 33.2 | 8.16 | 34.4 | 8.47 |
| | 35.0 | 24.1 | 5.91 | 26.1 | 6.74 | 28.2 | 7.49 | 30.2 | 8.33 | 30.8 | 8.58 | 31.7 | 8.74 | 33.1 | 8.96 |
| | 40.0 | 24.1 | 7.33 | 26.1 | 8.16 | 28.2 | 8.58 | 28.7 | 8.74 | 29.3 | 8.99 | 30.0 | 9.24 | 31.4 | 9.45 |
| | 43.0 | 24.1 | 8.49 | 26.1 | 8.66 | 26.6 | 8.83 | 27.2 | 8.99 | 28.1 | 9.24 | 29.0 | 9.49 | 30.2 | 9.74 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 120% | -5.0 | 23.5 | 2.79 | 25.5 | 3.29 | 27.4 | 3.70 | 29.4 | 4.19 | 31.3 | 4.52 | 33.3 | 4.85 | 35.3 | 5.22 |
| | 0.0 | 23.5 | 2.88 | 25.5 | 3.37 | 27.4 | 3.78 | 29.4 | 4.23 | 31.3 | 4.60 | 33.3 | 5.01 | 35.3 | 5.42 |
| | 5.0 | 23.5 | 2.96 | 25.5 | 3.45 | 27.4 | 3.86 | 29.4 | 4.31 | 31.3 | 4.77 | 33.3 | 5.18 | 35.3 | 5.59 |
| | 10.0 | 23.5 | 3.16 | 25.5 | 3.53 | 27.4 | 3.94 | 29.4 | 4.35 | 31.3 | 4.93 | 33.3 | 5.42 | 35.3 | 6.00 |
| | 15.0 | 23.5 | 3.41 | 25.5 | 3.78 | 27.4 | 4.19 | 29.4 | 4.52 | 31.3 | 5.18 | 33.3 | 5.92 | 35.3 | 6.57 |
| | 20.0 | 23.5 | 3.70 | 25.5 | 4.11 | 27.4 | 4.44 | 29.4 | 4.85 | 31.3 | 5.67 | 33.3 | 6.57 | 35.3 | 7.39 |
| | 25.0 | 23.5 | 4.27 | 25.5 | 4.68 | 27.4 | 5.09 | 29.4 | 5.50 | 31.3 | 6.41 | 33.3 | 7.64 | 34.7 | 7.87 |
| | 30.0 | 23.5 | 4.93 | 25.5 | 5.42 | 27.4 | 6.00 | 29.4 | 6.49 | 31.3 | 7.89 | 32.3 | 8.05 | 33.5 | 8.36 |
| | 35.0 | 23.5 | 5.83 | 25.5 | 6.65 | 27.4 | 7.39 | 29.4 | 8.22 | 30.0 | 8.46 | 30.9 | 8.63 | 32.2 | 8.84 |
| | 40.0 | 23.5 | 7.23 | 25.5 | 8.05 | 27.4 | 8.46 | 27.9 | 8.63 | 28.5 | 8.87 | 29.3 | 9.12 | 30.6 | 9.33 |
| | 43.0 | 23.5 | 8.38 | 25.5 | 8.54 | 25.9 | 8.71 | 26.5 | 8.87 | 27.3 | 9.12 | 28.2 | 9.37 | 29.4 | 9.61 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 110% | -5.0 | 23.0 | 2.73 | 24.9 | 3.22 | 26.9 | 3.62 | 28.8 | 4.10 | 30.7 | 4.42 | 32.6 | 4.74 | 34.5 | 5.11 |
| | 0.0 | 23.0 | 2.81 | 24.9 | 3.30 | 26.9 | 3.70 | 28.8 | 4.14 | 30.7 | 4.50 | 32.6 | 4.91 | 34.5 | 5.31 |
| | 5.0 | 23.0 | 2.90 | 24.9 | 3.38 | 26.9 | 3.78 | 28.8 | 4.22 | 30.7 | 4.66 | 32.6 | 5.07 | 34.5 | 5.47 |
| | 10.0 | 23.0 | 3.10 | 24.9 | 3.46 | 26.9 | 3.86 | 28.8 | 4.26 | 30.7 | 4.83 | 32.6 | 5.31 | 34.5 | 5.87 |
| | 15.0 | 23.0 | 3.34 | 24.9 | 3.70 | 26.9 | 4.10 | 28.8 | 4.42 | 30.7 | 5.07 | 32.6 | 5.79 | 34.5 | 6.43 |
| | 20.0 | 23.0 | 3.62 | 24.9 | 4.02 | 26.9 | 4.34 | 28.8 | 4.74 | 30.7 | 5.55 | 32.6 | 6.43 | 34.5 | 7.24 |
| | 25.0 | 23.0 | 4.18 | 24.9 | 4.58 | 26.9 | 4.99 | 28.8 | 5.39 | 30.7 | 6.27 | 32.6 | 7.48 | 34.0 | 7.70 |
| | 30.0 | 23.0 | 4.83 | 24.9 | 5.31 | 26.9 | 5.87 | 28.8 | 6.35 | 30.7 | 7.72 | 31.7 | 7.88 | 32.8 | 8.18 |
| | 35.0 | 23.0 | 5.71 | 24.9 | 6.51 | 26.9 | 7.24 | 28.8 | 8.04 | 29.4 | 8.28 | 30.2 | 8.44 | 31.5 | 8.65 |
| | 40.0 | 23.0 | 7.08 | 24.9 | 7.88 | 26.9 | 8.28 | 27.3 | 8.44 | 27.9 | 8.69 | 28.6 | 8.93 | 29.9 | 9.13 |
| | 43.0 | 23.0 | 8.20 | 24.9 | 8.36 | 25.3 | 8.52 | 25.9 | 8.69 | 26.8 | 8.93 | 27.6 | 9.17 | 28.8 | 9.41 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 100% | -5.0 | 22.4 | 2.69 | 24.2 | 3.16 | 26.1 | 3.56 | 28.0 | 4.03 | 29.8 | 4.35 | 31.7 | 4.66 | 33.6 | 5.02 |
| | 0.0 | 22.4 | 2.77 | 24.2 | 3.24 | 26.1 | 3.63 | 28.0 | 4.07 | 29.8 | 4.42 | 31.7 | 4.82 | 33.6 | 5.21 |
| | 5.0 | 22.4 | 2.84 | 24.2 | 3.32 | 26.1 | 3.71 | 28.0 | 4.15 | 29.8 | 4.58 | 31.7 | 4.98 | 33.6 | 5.37 |
| | 10.0 | 22.4 | 3.04 | 24.2 | 3.40 | 26.1 | 3.79 | 28.0 | 4.19 | 29.8 | 4.74 | 31.7 | 5.21 | 33.6 | 5.77 |
| | 15.0 | 22.4 | 3.28 | 24.2 | 3.63 | 26.1 | 4.03 | 28.0 | 4.35 | 29.8 | 4.98 | 31.7 | 5.69 | 33.6 | 6.32 |
| | 20.0 | 22.4 | 3.56 | 24.2 | 3.95 | 26.1 | 4.27 | 28.0 | 4.66 | 29.8 | 5.45 | 31.7 | 6.32 | 33.6 | 7.11 |
| | 25.0 | 22.4 | 4.11 | 24.2 | 4.50 | 26.1 | 4.90 | 28.0 | 5.29 | 29.8 | 6.16 | 31.7 | 7.35 | 33.0 | 7.57 |
| | 30.0 | 22.4 | 4.74 | 24.2 | 5.21 | 26.1 | 5.77 | 28.0 | 6.24 | 29.8 | 7.58 | 30.8 | 7.74 | 31.9 | 8.03 |
| | 35.0 | 22.4 | 5.61 | 24.2 | 6.40 | 26.1 | 7.11 | 28.0 | 7.90 | 28.6 | 8.14 | 29.4 | 8.30 | 30.7 | 8.50 |
| | 40.0 | 22.4 | 6.95 | 24.2 | 7.74 | 26.1 | 8.14 | 26.6 | 8.30 | 27.2 | 8.53 | 27.9 | 8.77 | 29.1 | 8.97 |
| | 43.0 | 22.4 | 8.06 | 24.2 | 8.22 | 24.6 | 8.37 | 25.2 | 8.53 | 26.0 | 8.77 | 26.9 | 9.01 | 28.0 | 9.24 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 90% | -5.0 | 20.2 | 2.36 | 21.8 | 2.78 | 23.5 | 3.13 | 25.2 | 3.55 | 26.9 | 3.82 | 28.6 | 4.10 | 30.2 | 4.41 |
| | 0.0 | 20.2 | 2.43 | 21.8 | 2.85 | 23.5 | 3.20 | 25.2 | 3.58 | 26.9 | 3.89 | 28.6 | 4.24 | 30.2 | 4.59 |
| | 5.0 | 20.2 | 2.50 | 21.8 | 2.92 | 23.5 | 3.27 | 25.2 | 3.65 | 26.9 | 4.03 | 28.6 | 4.38 | 30.2 | 4.73 |
| | 10.0 | 20.2 | 2.68 | 21.8 | 2.99 | 23.5 | 3.34 | 25.2 | 3.68 | 26.9 | 4.17 | 28.6 | 4.59 | 30.2 | 5.07 |
| | 15.0 | 20.2 | 2.89 | 21.8 | 3.20 | 23.5 | 3.55 | 25.2 | 3.82 | 26.9 | 4.38 | 28.6 | 5.01 | 30.2 | 5.56 |
| | 20.0 | 20.2 | 3.13 | 21.8 | 3.48 | 23.5 | 3.75 | 25.2 | 4.10 | 26.9 | 4.80 | 28.6 | 5.56 | 30.2 | 6.26 |
| | 25.0 | 20.2 | 3.62 | 21.8 | 3.96 | 23.5 | 4.31 | 25.2 | 4.66 | 26.9 | 5.42 | 28.6 | 6.47 | 29.7 | 6.66 |
| | 30.0 | 20.2 | 4.17 | 21.8 | 4.59 | 23.5 | 5.07 | 25.2 | 5.49 | 26.9 | 6.67 | 27.7 | 6.81 | 28.7 | 7.07 |
| | 35.0 | 20.2 | 4.94 | 21.8 | 5.63 | 23.5 | 6.26 | 25.2 | 6.95 | 25.7 | 7.16 | 26.5 | 7.30 | 27.6 | 7.48 |
| | 40.0 | 20.2 | 6.12 | 21.8 | 6.81 | 23.5 | 7.16 | 23.9 | 7.30 | 24.4 | 7.51 | 25.1 | 7.72 | 26.2 | 7.89 |
| | 43.0 | 20.2 | 7.09 | 21.8 | 7.23 | 22.2 | 7.37 | 22.7 | 7.51 | 23.4 | 7.72 | 24.2 | 7.93 | 25.2 | 8.13 |

# 3. SPW-C0905DXHN8 (Cooing)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 80% | -5.0 | 17.9 | 2.01 | 19.4 | 2.37 | 20.9 | 2.67 | 22.4 | 3.02 | 23.9 | 3.26 | 25.4 | 3.50 | 26.9 | 3.76 |
| | 0.0 | 17.9 | 2.07 | 19.4 | 2.43 | 20.9 | 2.73 | 22.4 | 3.05 | 23.9 | 3.32 | 25.4 | 3.61 | 26.9 | 3.91 |
| | 5.0 | 17.9 | 2.13 | 19.4 | 2.49 | 20.9 | 2.78 | 22.4 | 3.11 | 23.9 | 3.44 | 25.4 | 3.73 | 26.9 | 4.03 |
| | 10.0 | 17.9 | 2.28 | 19.4 | 2.55 | 20.9 | 2.84 | 22.4 | 3.14 | 23.9 | 3.56 | 25.4 | 3.91 | 26.9 | 4.33 |
| | 15.0 | 17.9 | 2.46 | 19.4 | 2.73 | 20.9 | 3.02 | 22.4 | 3.26 | 23.9 | 3.73 | 25.4 | 4.27 | 26.9 | 4.74 |
| | 20.0 | 17.9 | 2.67 | 19.4 | 2.96 | 20.9 | 3.20 | 22.4 | 3.50 | 23.9 | 4.09 | 25.4 | 4.74 | 26.9 | 5.33 |
| | 25.0 | 17.9 | 3.08 | 19.4 | 3.38 | 20.9 | 3.67 | 22.4 | 3.97 | 23.9 | 4.62 | 25.4 | 5.51 | 26.4 | 5.68 |
| | 30.0 | 17.9 | 3.56 | 19.4 | 3.91 | 20.9 | 4.33 | 22.4 | 4.68 | 23.9 | 5.69 | 24.6 | 5.81 | 25.5 | 6.03 |
| | 35.0 | 17.9 | 4.21 | 19.4 | 4.80 | 20.9 | 5.33 | 22.4 | 5.93 | 22.8 | 6.10 | 23.5 | 6.22 | 24.5 | 6.38 |
| | 40.0 | 17.9 | 5.21 | 19.4 | 5.81 | 20.9 | 6.10 | 21.3 | 6.22 | 21.7 | 6.40 | 22.3 | 6.58 | 23.3 | 6.72 |
| | 43.0 | 17.9 | 6.04 | 19.4 | 6.16 | 19.7 | 6.28 | 20.2 | 6.40 | 20.8 | 6.58 | 21.5 | 6.75 | 22.4 | 6.93 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 70% | -5.0 | 15.7 | 1.69 | 17.0 | 1.99 | 18.3 | 2.24 | 19.6 | 2.54 | 20.9 | 2.74 | 22.2 | 2.94 | 23.5 | 3.16 |
| | 0.0 | 15.7 | 1.74 | 17.0 | 2.04 | 18.3 | 2.29 | 19.6 | 2.56 | 20.9 | 2.79 | 22.2 | 3.04 | 23.5 | 3.28 |
| | 5.0 | 15.7 | 1.79 | 17.0 | 2.09 | 18.3 | 2.34 | 19.6 | 2.61 | 20.9 | 2.89 | 22.2 | 3.14 | 23.5 | 3.38 |
| | 10.0 | 15.7 | 1.92 | 17.0 | 2.14 | 18.3 | 2.39 | 19.6 | 2.64 | 20.9 | 2.99 | 22.2 | 3.28 | 23.5 | 3.63 |
| | 15.0 | 15.7 | 2.07 | 17.0 | 2.29 | 18.3 | 2.54 | 19.6 | 2.74 | 20.9 | 3.14 | 22.2 | 3.58 | 23.5 | 3.98 |
| | 20.0 | 15.7 | 2.24 | 17.0 | 2.49 | 18.3 | 2.69 | 19.6 | 2.94 | 20.9 | 3.43 | 22.2 | 3.98 | 23.5 | 4.48 |
| | 25.0 | 15.7 | 2.59 | 17.0 | 2.84 | 18.3 | 3.09 | 19.6 | 3.33 | 20.9 | 3.88 | 22.2 | 4.63 | 23.1 | 4.77 |
| | 30.0 | 15.7 | 2.99 | 17.0 | 3.28 | 18.3 | 3.63 | 19.6 | 3.93 | 20.9 | 4.78 | 21.6 | 4.88 | 22.3 | 5.06 |
| | 35.0 | 15.7 | 3.53 | 17.0 | 4.03 | 18.3 | 4.48 | 19.6 | 4.98 | 20.0 | 5.13 | 20.6 | 5.23 | 21.5 | 5.36 |
| | 40.0 | 15.7 | 4.38 | 17.0 | 4.88 | 18.3 | 5.13 | 18.6 | 5.23 | 19.0 | 5.38 | 19.5 | 5.52 | 20.4 | 5.65 |
| | 43.0 | 15.7 | 5.08 | 17.0 | 5.18 | 17.2 | 5.28 | 17.6 | 5.38 | 18.2 | 5.52 | 18.8 | 5.67 | 19.6 | 5.82 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 60% | -5.0 | 13.4 | 1.37 | 14.5 | 1.61 | 15.7 | 1.81 | 16.8 | 2.05 | 17.9 | 2.22 | 19.0 | 2.38 | 20.2 | 2.56 |
| | 0.0 | 13.4 | 1.41 | 14.5 | 1.65 | 15.7 | 1.85 | 16.8 | 2.07 | 17.9 | 2.26 | 19.0 | 2.46 | 20.2 | 2.66 |
| | 5.0 | 13.4 | 1.45 | 14.5 | 1.69 | 15.7 | 1.89 | 16.8 | 2.12 | 17.9 | 2.34 | 19.0 | 2.54 | 20.2 | 2.74 |
| | 10.0 | 13.4 | 1.55 | 14.5 | 1.73 | 15.7 | 1.93 | 16.8 | 2.14 | 17.9 | 2.42 | 19.0 | 2.66 | 20.2 | 2.94 |
| | 15.0 | 13.4 | 1.67 | 14.5 | 1.85 | 15.7 | 2.05 | 16.8 | 2.22 | 17.9 | 2.54 | 19.0 | 2.90 | 20.2 | 3.22 |
| | 20.0 | 13.4 | 1.81 | 14.5 | 2.01 | 15.7 | 2.18 | 16.8 | 2.38 | 17.9 | 2.78 | 19.0 | 3.22 | 20.2 | 3.63 |
| | 25.0 | 13.4 | 2.10 | 14.5 | 2.30 | 15.7 | 2.50 | 16.8 | 2.70 | 17.9 | 3.14 | 19.0 | 3.75 | 19.8 | 3.86 |
| | 30.0 | 13.4 | 2.42 | 14.5 | 2.66 | 15.7 | 2.94 | 16.8 | 3.18 | 17.9 | 3.87 | 18.5 | 3.95 | 19.2 | 4.10 |
| | 35.0 | 13.4 | 2.86 | 14.5 | 3.26 | 15.7 | 3.63 | 16.8 | 4.03 | 17.1 | 4.15 | 17.6 | 4.23 | 18.4 | 4.34 |
| | 40.0 | 13.4 | 3.55 | 14.5 | 3.95 | 15.7 | 4.15 | 16.0 | 4.23 | 16.3 | 4.35 | 16.7 | 4.47 | 17.5 | 4.57 |
| | 43.0 | 13.4 | 4.11 | 14.5 | 4.19 | 14.8 | 4.27 | 15.1 | 4.35 | 15.6 | 4.47 | 16.1 | 4.59 | 16.8 | 4.71 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 50% | -5.0 | 11.2 | 1.05 | 12.1 | 1.23 | 13.1 | 1.39 | 14.0 | 1.57 | 14.9 | 1.69 | 15.9 | 1.82 | 16.8 | 1.96 |
| | 0.0 | 11.2 | 1.08 | 12.1 | 1.26 | 13.1 | 1.42 | 14.0 | 1.59 | 14.9 | 1.73 | 15.9 | 1.88 | 16.8 | 2.03 |
| | 5.0 | 11.2 | 1.11 | 12.1 | 1.29 | 13.1 | 1.45 | 14.0 | 1.62 | 14.9 | 1.79 | 15.9 | 1.94 | 16.8 | 2.10 |
| | 10.0 | 11.2 | 1.19 | 12.1 | 1.32 | 13.1 | 1.48 | 14.0 | 1.63 | 14.9 | 1.85 | 15.9 | 2.03 | 16.8 | 2.25 |
| | 15.0 | 11.2 | 1.28 | 12.1 | 1.42 | 13.1 | 1.57 | 14.0 | 1.69 | 14.9 | 1.94 | 15.9 | 2.22 | 16.8 | 2.46 |
| | 20.0 | 11.2 | 1.39 | 12.1 | 1.54 | 13.1 | 1.66 | 14.0 | 1.82 | 14.9 | 2.13 | 15.9 | 2.46 | 16.8 | 2.77 |
| | 25.0 | 11.2 | 1.60 | 12.1 | 1.76 | 13.1 | 1.91 | 14.0 | 2.06 | 14.9 | 2.40 | 15.9 | 2.87 | 16.5 | 2.95 |
| | 30.0 | 11.2 | 1.85 | 12.1 | 2.03 | 13.1 | 2.25 | 14.0 | 2.43 | 14.9 | 2.96 | 15.4 | 3.02 | 16.0 | 3.13 |
| | 35.0 | 11.2 | 2.19 | 12.1 | 2.50 | 13.1 | 2.77 | 14.0 | 3.08 | 14.3 | 3.17 | 14.7 | 3.24 | 15.3 | 3.32 |
| | 40.0 | 11.2 | 2.71 | 12.1 | 3.02 | 13.1 | 3.17 | 13.3 | 3.24 | 13.6 | 3.33 | 13.9 | 3.42 | 14.6 | 3.50 |
| | 43.0 | 11.2 | 3.14 | 12.1 | 3.20 | 12.3 | 3.27 | 12.6 | 3.33 | 13.0 | 3.42 | 13.4 | 3.51 | 14.0 | 3.60 |

# 4. SPW-C0905DXHN8 (Heating)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 130% | -19.8 | -20.0 | 23.8 | 8.12 | 23.1 | 8.04 | 22.4 | 7.96 | 22.1 | 7.92 | 21.7 | 7.89 | 21.1 | 7.81 | 20.4 | 7.73 |
| | -14.7 | -15.0 | 27.2 | 8.63 | 26.5 | 8.55 | 25.8 | 8.48 | 25.5 | 8.44 | 25.1 | 8.40 | 24.4 | 8.32 | 23.8 | 8.24 |
| | -9.6 | -10.0 | 30.6 | 9.14 | 29.9 | 9.07 | 29.2 | 8.99 | 28.9 | 8.95 | 28.5 | 8.91 | 27.8 | 8.83 | 27.2 | 8.75 |
| | -4.4 | -5.0 | 34.0 | 9.66 | 33.3 | 9.58 | 32.6 | 9.50 | 32.3 | 9.46 | 31.9 | 9.42 | 30.4 | 8.72 | 28.0 | 7.97 |
| | -1.8 | -2.5 | 35.7 | 9.91 | 35.0 | 9.83 | 34.3 | 9.76 | 34.0 | 9.39 | 32.8 | 9.02 | 30.4 | 8.27 | 28.0 | 7.52 |
| | 0.8 | 0.0 | 37.4 | 10.17 | 36.7 | 10.07 | 35.1 | 9.32 | 34.0 | 8.95 | 32.8 | 8.57 | 30.4 | 7.82 | 28.0 | 7.08 |
| | 2.8 | 2.0 | 38.4 | 10.24 | 37.5 | 9.71 | 35.1 | 8.96 | 34.0 | 8.59 | 32.8 | 8.21 | 30.4 | 7.47 | 28.0 | 6.72 |
| | 6.0 | 5.0 | 39.9 | 9.92 | 37.5 | 9.17 | 35.1 | 8.43 | 34.0 | 8.05 | 32.8 | 7.68 | 30.4 | 6.93 | 28.0 | 6.18 |
| | 7.0 | 6.0 | 39.9 | 9.74 | 37.5 | 9.00 | 35.1 | 8.25 | 34.0 | 7.87 | 32.8 | 7.50 | 30.4 | 6.75 | 28.0 | 6.00 |
| | 8.6 | 7.5 | 39.9 | 9.48 | 37.5 | 8.73 | 35.1 | 7.98 | 34.0 | 7.61 | 32.8 | 7.23 | 30.4 | 6.48 | 28.0 | 5.74 |
| | 11.2 | 10.0 | 39.9 | 9.03 | 37.5 | 8.28 | 35.1 | 7.53 | 34.0 | 7.16 | 32.8 | 6.79 | 30.4 | 6.04 | 28.0 | 5.29 |
| | 16.4 | 15.0 | 39.9 | 8.14 | 37.5 | 7.39 | 35.1 | 6.64 | 34.0 | 6.27 | 32.8 | 5.89 | 30.4 | 5.14 | 28.0 | 4.40 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 120% | -19.8 | -20.0 | 23.2 | 8.08 | 22.5 | 8.00 | 21.8 | 7.92 | 21.5 | 7.89 | 21.2 | 7.85 | 20.5 | 7.77 | 19.8 | 7.69 |
| | -14.7 | -15.0 | 26.5 | 8.59 | 25.8 | 8.51 | 25.1 | 8.43 | 24.8 | 8.39 | 24.5 | 8.36 | 23.8 | 8.28 | 23.2 | 8.20 |
| | -9.6 | -10.0 | 29.8 | 9.10 | 29.1 | 9.02 | 28.4 | 8.94 | 28.1 | 8.90 | 27.8 | 8.86 | 27.1 | 8.79 | 26.5 | 8.71 |
| | -4.4 | -5.0 | 33.1 | 9.61 | 32.4 | 9.53 | 31.8 | 9.45 | 31.4 | 9.41 | 31.1 | 9.37 | 29.6 | 8.68 | 27.3 | 7.93 |
| | -1.8 | -2.5 | 34.7 | 9.86 | 34.1 | 9.79 | 33.4 | 9.71 | 33.1 | 9.35 | 31.9 | 8.97 | 29.6 | 8.23 | 27.3 | 7.49 |
| | 0.8 | 0.0 | 36.4 | 10.12 | 35.7 | 10.02 | 34.2 | 9.27 | 33.1 | 8.90 | 31.9 | 8.53 | 29.6 | 7.79 | 27.3 | 7.04 |
| | 2.8 | 2.0 | 37.4 | 10.19 | 36.5 | 9.66 | 34.2 | 8.92 | 33.1 | 8.55 | 31.9 | 8.17 | 29.6 | 7.43 | 27.3 | 6.69 |
| | 6.0 | 5.0 | 38.9 | 9.87 | 36.5 | 9.13 | 34.2 | 8.39 | 33.1 | 8.01 | 31.9 | 7.64 | 29.6 | 6.90 | 27.3 | 6.15 |
| | 7.0 | 6.0 | 38.9 | 9.70 | 36.5 | 8.95 | 34.2 | 8.21 | 33.1 | 7.84 | 31.9 | 7.46 | 29.6 | 6.72 | 27.3 | 5.97 |
| | 8.6 | 7.5 | 38.9 | 9.43 | 36.5 | 8.68 | 34.2 | 7.94 | 33.1 | 7.57 | 31.9 | 7.20 | 29.6 | 6.45 | 27.3 | 5.71 |
| | 11.2 | 10.0 | 38.9 | 8.98 | 36.5 | 8.24 | 34.2 | 7.50 | 33.1 | 7.12 | 31.9 | 6.75 | 29.6 | 6.01 | 27.3 | 5.26 |
| | 16.4 | 15.0 | 38.9 | 8.10 | 36.5 | 7.35 | 34.2 | 6.61 | 33.1 | 6.23 | 31.9 | 5.86 | 29.6 | 5.12 | 27.3 | 4.37 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 110% | -19.8 | -20.0 | 22.7 | 8.04 | 22.0 | 7.96 | 21.4 | 7.89 | 21.0 | 7.85 | 20.7 | 7.81 | 20.1 | 7.73 | 19.4 | 7.65 |
| | -14.7 | -15.0 | 25.9 | 8.55 | 25.3 | 8.47 | 24.6 | 8.39 | 24.3 | 8.35 | 24.0 | 8.31 | 23.3 | 8.24 | 22.7 | 8.16 |
| | -9.6 | -10.0 | 29.1 | 9.05 | 28.5 | 8.98 | 27.8 | 8.90 | 27.5 | 8.86 | 27.2 | 8.82 | 26.6 | 8.74 | 25.9 | 8.67 |
| | -4.4 | -5.0 | 32.4 | 9.56 | 31.7 | 9.48 | 31.1 | 9.41 | 30.8 | 9.37 | 30.4 | 9.33 | 29.0 | 8.63 | 26.7 | 7.89 |
| | -1.8 | -2.5 | 34.0 | 9.82 | 33.4 | 9.74 | 32.7 | 9.66 | 32.4 | 9.30 | 31.2 | 8.93 | 29.0 | 8.19 | 26.7 | 7.45 |
| | 0.8 | 0.0 | 35.6 | 10.07 | 35.0 | 9.97 | 33.5 | 9.23 | 32.4 | 8.86 | 31.2 | 8.49 | 29.0 | 7.75 | 26.7 | 7.01 |
| | 2.8 | 2.0 | 36.6 | 10.14 | 35.8 | 9.62 | 33.5 | 8.87 | 32.4 | 8.50 | 31.2 | 8.13 | 29.0 | 7.39 | 26.7 | 6.65 |
| | 6.0 | 5.0 | 38.0 | 9.83 | 35.8 | 9.08 | 33.5 | 8.34 | 32.4 | 7.97 | 31.2 | 7.60 | 29.0 | 6.86 | 26.7 | 6.12 |
| | 7.0 | 6.0 | 38.0 | 9.65 | 35.8 | 8.91 | 33.5 | 8.17 | 32.4 | 7.80 | 31.2 | 7.43 | 29.0 | 6.69 | 26.7 | 5.94 |
| | 8.6 | 7.5 | 38.0 | 9.38 | 35.8 | 8.64 | 33.5 | 7.90 | 32.4 | 7.53 | 31.2 | 7.16 | 29.0 | 6.42 | 26.7 | 5.68 |
| | 11.2 | 10.0 | 38.0 | 8.94 | 35.8 | 8.20 | 33.5 | 7.46 | 32.4 | 7.09 | 31.2 | 6.72 | 29.0 | 5.98 | 26.7 | 5.24 |
| | 16.4 | 15.0 | 38.0 | 8.06 | 35.8 | 7.31 | 33.5 | 6.57 | 32.4 | 6.20 | 31.2 | 5.83 | 29.0 | 5.09 | 26.7 | 4.35 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 100% | -19.8 | -20.0 | 22.1 | 7.99 | 21.4 | 7.92 | 20.8 | 7.84 | 20.5 | 7.80 | 20.2 | 7.76 | 19.5 | 7.68 | 18.9 | 7.61 |
| | -14.7 | -15.0 | 25.2 | 8.50 | 24.6 | 8.42 | 23.9 | 8.34 | 23.6 | 8.30 | 23.3 | 8.26 | 22.7 | 8.19 | 22.1 | 8.11 |
| | -9.6 | -10.0 | 28.4 | 9.00 | 27.7 | 8.92 | 27.1 | 8.85 | 26.8 | 8.81 | 26.5 | 8.77 | 25.8 | 8.69 | 25.2 | 8.61 |
| | -4.4 | -5.0 | 31.5 | 9.50 | 30.9 | 9.43 | 30.2 | 9.35 | 29.9 | 9.31 | 29.6 | 9.27 | 28.2 | 8.58 | 26.0 | 7.84 |
| | -1.8 | -2.5 | 33.1 | 9.76 | 32.4 | 9.68 | 31.8 | 9.60 | 31.5 | 9.25 | 30.4 | 8.88 | 28.2 | 8.14 | 26.0 | 7.40 |
| | 0.8 | 0.0 | 34.7 | 10.01 | 34.0 | 9.91 | 32.6 | 9.17 | 31.5 | 8.81 | 30.4 | 8.44 | 28.2 | 7.70 | 26.0 | 6.96 |
| | 2.8 | 2.0 | 35.6 | 10.08 | 34.8 | 9.56 | 32.6 | 8.82 | 31.5 | 8.45 | 30.4 | 8.09 | 28.2 | 7.35 | 26.0 | 6.61 |
| | 6.0 | 5.0 | 37.0 | 9.77 | 34.8 | 9.03 | 32.6 | 8.29 | 31.5 | 7.93 | 30.4 | 7.56 | 28.2 | 6.82 | 26.0 | 6.09 |
| | 7.0 | 6.0 | 37.0 | 9.59 | 34.8 | 8.85 | 32.6 | 8.12 | 31.5 | 7.75 | 30.4 | 7.38 | 28.2 | 6.65 | 26.0 | 5.91 |
| | 8.6 | 7.5 | 37.0 | 9.33 | 34.8 | 8.59 | 32.6 | 7.85 | 31.5 | 7.49 | 30.4 | 7.12 | 28.2 | 6.38 | 26.0 | 5.65 |
| | 11.2 | 10.0 | 37.0 | 8.89 | 34.8 | 8.15 | 32.6 | 7.41 | 31.5 | 7.05 | 30.4 | 6.68 | 28.2 | 5.94 | 26.0 | 5.21 |
| | 16.4 | 15.0 | 37.0 | 8.01 | 34.8 | 7.27 | 32.6 | 6.53 | 31.5 | 6.17 | 30.4 | 5.80 | 28.2 | 5.06 | 26.0 | 4.33 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 90% | -19.8 | -20.0 | 19.8 | 7.11 | 19.3 | 7.05 | 18.7 | 6.98 | 18.4 | 6.94 | 18.1 | 6.91 | 17.6 | 6.84 | 17.0 | 6.77 |
| | -14.7 | -15.0 | 22.7 | 7.56 | 22.1 | 7.49 | 21.5 | 7.42 | 21.3 | 7.39 | 21.0 | 7.36 | 20.4 | 7.29 | 19.8 | 7.22 |
| | -9.6 | -10.0 | 25.5 | 8.01 | 24.9 | 7.94 | 24.4 | 7.87 | 24.1 | 7.84 | 23.8 | 7.80 | 23.2 | 7.73 | 22.7 | 7.67 |
| | -4.4 | -5.0 | 28.4 | 8.46 | 27.8 | 8.39 | 27.2 | 8.32 | 26.9 | 8.29 | 26.6 | 8.25 | 25.4 | 7.64 | 23.4 | 6.98 |
| | -1.8 | -2.5 | 29.8 | 8.68 | 29.2 | 8.61 | 28.6 | 8.55 | 28.4 | 8.23 | 27.4 | 7.90 | 25.4 | 7.25 | 23.4 | 6.59 |
| | 0.8 | 0.0 | 31.2 | 8.91 | 30.6 | 8.82 | 29.3 | 8.16 | 28.4 | 7.84 | 27.4 | 7.51 | 25.4 | 6.85 | 23.4 | 6.20 |
| | 2.8 | 2.0 | 32.0 | 8.97 | 31.3 | 8.51 | 29.3 | 7.85 | 28.4 | 7.52 | 27.4 | 7.20 | 25.4 | 6.54 | 23.4 | 5.89 |
| | 6.0 | 5.0 | 33.3 | 8.69 | 31.3 | 8.04 | 29.3 | 7.38 | 28.4 | 7.05 | 27.4 | 6.73 | 25.4 | 6.07 | 23.4 | 5.42 |
| | 7.0 | 6.0 | 33.3 | 8.54 | 31.3 | 7.88 | 29.3 | 7.23 | 28.4 | 6.90 | 27.4 | 6.57 | 25.4 | 5.91 | 23.4 | 5.26 |
| | 8.6 | 7.5 | 33.3 | 8.30 | 31.3 | 7.65 | 29.3 | 6.99 | 28.4 | 6.66 | 27.4 | 6.34 | 25.4 | 5.68 | 23.4 | 5.02 |
| | 11.2 | 10.0 | 33.3 | 7.91 | 31.3 | 7.25 | 29.3 | 6.60 | 28.4 | 6.27 | 27.4 | 5.94 | 25.4 | 5.29 | 23.4 | 4.63 |
| | 16.4 | 15.0 | 33.3 | 7.13 | 31.3 | 6.47 | 29.3 | 5.82 | 28.4 | 5.49 | 27.4 | 5.16 | 25.4 | 4.51 | 23.4 | 3.85 |

# 4. SPW-C0905DXHN8 (Heating)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 80% | -19.8 | -20.0 | 17.6 | 6.31 | 17.1 | 6.25 | 16.6 | 6.19 | 16.4 | 6.16 | 16.1 | 6.13 | 15.6 | 6.07 | 15.1 | 6.01 |
| | -14.7 | -15.0 | 20.2 | 6.71 | 19.7 | 6.65 | 19.2 | 6.59 | 18.9 | 6.56 | 18.6 | 6.53 | 18.1 | 6.47 | 17.6 | 6.41 |
| | -9.6 | -10.0 | 22.7 | 7.11 | 22.2 | 7.05 | 21.7 | 6.99 | 21.4 | 6.96 | 21.2 | 6.93 | 20.7 | 6.87 | 20.2 | 6.80 |
| | -4.4 | -5.0 | 25.2 | 7.51 | 24.7 | 7.45 | 24.2 | 7.39 | 23.9 | 7.36 | 23.7 | 7.32 | 22.6 | 6.78 | 20.8 | 6.20 |
| | -1.8 | -2.5 | 26.5 | 7.71 | 26.0 | 7.65 | 25.5 | 7.59 | 25.2 | 7.30 | 24.3 | 7.01 | 22.6 | 6.43 | 20.8 | 5.85 |
| | 0.8 | 0.0 | 27.7 | 7.91 | 27.2 | 7.83 | 26.1 | 7.25 | 25.2 | 6.96 | 24.3 | 6.67 | 22.6 | 6.08 | 20.8 | 5.50 |
| | 2.8 | 2.0 | 28.5 | 7.96 | 27.8 | 7.55 | 26.1 | 6.97 | 25.2 | 6.68 | 24.3 | 6.39 | 22.6 | 5.81 | 20.8 | 5.22 |
| | 6.0 | 5.0 | 29.6 | 7.72 | 27.8 | 7.13 | 26.1 | 6.55 | 25.2 | 6.26 | 24.3 | 5.97 | 22.6 | 5.39 | 20.8 | 4.81 |
| | 7.0 | 6.0 | 29.6 | 7.58 | 27.8 | 6.99 | 26.1 | 6.41 | 25.2 | 6.12 | 24.3 | 5.83 | 22.6 | 5.25 | 20.8 | 4.67 |
| | 8.6 | 7.5 | 29.6 | 7.37 | 27.8 | 6.79 | 26.1 | 6.20 | 25.2 | 5.91 | 24.3 | 5.62 | 22.6 | 5.04 | 20.8 | 4.46 |
| | 11.2 | 10.0 | 29.6 | 7.02 | 27.8 | 6.44 | 26.1 | 5.86 | 25.2 | 5.57 | 24.3 | 5.28 | 22.6 | 4.69 | 20.8 | 4.11 |
| | 16.4 | 15.0 | 29.6 | 6.33 | 27.8 | 5.74 | 26.1 | 5.16 | 25.2 | 4.87 | 24.3 | 4.58 | 22.6 | 4.00 | 20.8 | 3.42 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 70% | -19.8 | -20.0 | 15.4 | 5.44 | 15.0 | 5.38 | 14.6 | 5.33 | 14.3 | 5.30 | 14.1 | 5.28 | 13.7 | 5.22 | 13.2 | 5.17 |
| | -14.7 | -15.0 | 17.6 | 5.78 | 17.2 | 5.73 | 16.8 | 5.67 | 16.5 | 5.65 | 16.3 | 5.62 | 15.9 | 5.57 | 15.4 | 5.51 |
| | -9.6 | -10.0 | 19.8 | 6.12 | 19.4 | 6.07 | 19.0 | 6.02 | 18.7 | 5.99 | 18.5 | 5.96 | 18.1 | 5.91 | 17.6 | 5.86 |
| | -4.4 | -5.0 | 22.1 | 6.46 | 21.6 | 6.41 | 21.2 | 6.36 | 20.9 | 6.33 | 20.7 | 6.31 | 19.7 | 5.83 | 18.2 | 5.33 |
| | -1.8 | -2.5 | 23.2 | 6.63 | 22.7 | 6.58 | 22.3 | 6.53 | 22.1 | 6.29 | 21.3 | 6.04 | 19.7 | 5.54 | 18.2 | 5.04 |
| | 0.8 | 0.0 | 24.3 | 6.81 | 23.8 | 6.74 | 22.8 | 6.24 | 22.1 | 5.99 | 21.3 | 5.74 | 19.7 | 5.24 | 18.2 | 4.74 |
| | 2.8 | 2.0 | 24.9 | 6.85 | 24.4 | 6.50 | 22.8 | 6.00 | 22.1 | 5.75 | 21.3 | 5.50 | 19.7 | 5.00 | 18.2 | 4.50 |
| | 6.0 | 5.0 | 25.9 | 6.64 | 24.4 | 6.14 | 22.8 | 5.64 | 22.1 | 5.39 | 21.3 | 5.14 | 19.7 | 4.64 | 18.2 | 4.14 |
| | 7.0 | 6.0 | 25.9 | 6.52 | 24.4 | 6.02 | 22.8 | 5.52 | 22.1 | 5.27 | 21.3 | 5.02 | 19.7 | 4.52 | 18.2 | 4.02 |
| | 8.6 | 7.5 | 25.9 | 6.34 | 24.4 | 5.84 | 22.8 | 5.34 | 22.1 | 5.09 | 21.3 | 4.84 | 19.7 | 4.34 | 18.2 | 3.84 |
| | 11.2 | 10.0 | 25.9 | 6.04 | 24.4 | 5.54 | 22.8 | 5.04 | 22.1 | 4.79 | 21.3 | 4.54 | 19.7 | 4.04 | 18.2 | 3.54 |
| | 16.4 | 15.0 | 25.9 | 5.44 | 24.4 | 4.94 | 22.8 | 4.44 | 22.1 | 4.19 | 21.3 | 3.94 | 19.7 | 3.44 | 18.2 | 2.94 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 60% | -19.8 | -20.0 | 13.2 | 4.56 | 12.9 | 4.51 | 12.5 | 4.47 | 12.3 | 4.45 | 12.1 | 4.42 | 11.7 | 4.38 | 11.3 | 4.34 |
| | -14.7 | -15.0 | 15.1 | 4.84 | 14.7 | 4.80 | 14.4 | 4.75 | 14.2 | 4.73 | 14.0 | 4.71 | 13.6 | 4.67 | 13.2 | 4.62 |
| | -9.6 | -10.0 | 17.0 | 5.13 | 16.6 | 5.09 | 16.3 | 5.04 | 16.1 | 5.02 | 15.9 | 5.00 | 15.5 | 4.95 | 15.1 | 4.91 |
| | -4.4 | -5.0 | 18.9 | 5.42 | 18.5 | 5.37 | 18.1 | 5.33 | 18.0 | 5.31 | 17.8 | 5.29 | 16.9 | 4.89 | 15.6 | 4.47 |
| | -1.8 | -2.5 | 19.8 | 5.56 | 19.5 | 5.52 | 19.1 | 5.47 | 18.9 | 5.27 | 18.2 | 5.06 | 16.9 | 4.64 | 15.6 | 4.22 |
| | 0.8 | 0.0 | 20.8 | 5.70 | 20.4 | 5.65 | 19.6 | 5.23 | 18.9 | 5.02 | 18.2 | 4.81 | 16.9 | 4.39 | 15.6 | 3.97 |
| | 2.8 | 2.0 | 21.4 | 5.74 | 20.9 | 5.45 | 19.6 | 5.03 | 18.9 | 4.82 | 18.2 | 4.61 | 16.9 | 4.19 | 15.6 | 3.77 |
| | 6.0 | 5.0 | 22.2 | 5.57 | 20.9 | 5.15 | 19.6 | 4.73 | 18.9 | 4.52 | 18.2 | 4.31 | 16.9 | 3.89 | 15.6 | 3.47 |
| | 7.0 | 6.0 | 22.2 | 5.47 | 20.9 | 5.05 | 19.6 | 4.63 | 18.9 | 4.42 | 18.2 | 4.21 | 16.9 | 3.79 | 15.6 | 3.37 |
| | 8.6 | 7.5 | 22.2 | 5.32 | 20.9 | 4.90 | 19.6 | 4.48 | 18.9 | 4.27 | 18.2 | 4.06 | 16.9 | 3.64 | 15.6 | 3.22 |
| | 11.2 | 10.0 | 22.2 | 5.07 | 20.9 | 4.65 | 19.6 | 4.23 | 18.9 | 4.02 | 18.2 | 3.81 | 16.9 | 3.39 | 15.6 | 2.97 |
| | 16.4 | 15.0 | 22.2 | 4.56 | 20.9 | 4.14 | 19.6 | 3.72 | 18.9 | 3.52 | 18.2 | 3.31 | 16.9 | 2.89 | 15.6 | 2.47 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 50% | -19.8 | -20.0 | 11.0 | 3.76 | 10.7 | 3.72 | 10.4 | 3.68 | 10.2 | 3.67 | 10.1 | 3.65 | 9.8 | 3.61 | 9.5 | 3.57 |
| | -14.7 | -15.0 | 12.6 | 3.99 | 12.3 | 3.96 | 12.0 | 3.92 | 11.8 | 3.90 | 11.7 | 3.88 | 11.3 | 3.85 | 11.0 | 3.81 |
| | -9.6 | -10.0 | 14.2 | 4.23 | 13.9 | 4.19 | 13.5 | 4.16 | 13.4 | 4.14 | 13.2 | 4.12 | 12.9 | 4.08 | 12.6 | 4.05 |
| | -4.4 | -5.0 | 15.8 | 4.47 | 15.4 | 4.43 | 15.1 | 4.39 | 15.0 | 4.38 | 14.8 | 4.36 | 14.1 | 4.03 | 13.0 | 3.69 |
| | -1.8 | -2.5 | 16.5 | 4.59 | 16.2 | 4.55 | 15.9 | 4.51 | 15.8 | 4.35 | 15.2 | 4.17 | 14.1 | 3.83 | 13.0 | 3.48 |
| | 0.8 | 0.0 | 17.3 | 4.70 | 17.0 | 4.66 | 16.3 | 4.31 | 15.8 | 4.14 | 15.2 | 3.97 | 14.1 | 3.62 | 13.0 | 3.27 |
| | 2.8 | 2.0 | 17.8 | 4.74 | 17.4 | 4.49 | 16.3 | 4.15 | 15.8 | 3.97 | 15.2 | 3.80 | 14.1 | 3.45 | 13.0 | 3.11 |
| | 6.0 | 5.0 | 18.5 | 4.59 | 17.4 | 4.24 | 16.3 | 3.90 | 15.8 | 3.73 | 15.2 | 3.55 | 14.1 | 3.21 | 13.0 | 2.86 |
| | 7.0 | 6.0 | 18.5 | 4.51 | 17.4 | 4.16 | 16.3 | 3.82 | 15.8 | 3.64 | 15.2 | 3.47 | 14.1 | 3.12 | 13.0 | 2.78 |
| | 8.6 | 7.5 | 18.5 | 4.38 | 17.4 | 4.04 | 16.3 | 3.69 | 15.8 | 3.52 | 15.2 | 3.35 | 14.1 | 3.00 | 13.0 | 2.65 |
| | 11.2 | 10.0 | 18.5 | 4.18 | 17.4 | 3.83 | 16.3 | 3.48 | 15.8 | 3.31 | 15.2 | 3.14 | 14.1 | 2.79 | 13.0 | 2.45 |
| | 16.4 | 15.0 | 18.5 | 3.76 | 17.4 | 3.42 | 16.3 | 3.07 | 15.8 | 2.90 | 15.2 | 2.73 | 14.1 | 2.38 | 13.0 | 2.03 |

# 5. SPW-C1155DXHN8 (Cooling)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 130% | -5.0 | 28.9 | 3.43 | 31.3 | 4.04 | 33.7 | 4.54 | 36.1 | 5.15 | 38.5 | 5.55 | 40.9 | 5.96 | 43.3 | 6.41 |
| | 0.0 | 28.9 | 3.53 | 31.3 | 4.14 | 33.7 | 4.64 | 36.1 | 5.20 | 38.5 | 5.65 | 40.9 | 6.16 | 43.3 | 6.66 |
| | 5.0 | 28.9 | 3.64 | 31.3 | 4.24 | 33.7 | 4.75 | 36.1 | 5.30 | 38.5 | 5.86 | 40.9 | 6.36 | 43.3 | 6.87 |
| | 10.0 | 28.9 | 3.89 | 31.3 | 4.34 | 33.7 | 4.85 | 36.1 | 5.35 | 38.5 | 6.06 | 40.9 | 6.66 | 43.3 | 7.37 |
| | 15.0 | 28.9 | 4.19 | 31.3 | 4.64 | 33.7 | 5.15 | 36.1 | 5.55 | 38.5 | 6.36 | 40.9 | 7.27 | 43.3 | 8.08 |
| | 20.0 | 28.9 | 4.54 | 31.3 | 5.05 | 33.7 | 5.45 | 36.1 | 5.96 | 38.5 | 6.97 | 40.9 | 8.08 | 43.3 | 9.09 |
| | 25.0 | 28.9 | 5.25 | 31.3 | 5.76 | 33.7 | 6.26 | 36.1 | 6.77 | 38.5 | 7.88 | 40.9 | 9.39 | 42.6 | 9.67 |
| | 30.0 | 28.9 | 6.06 | 31.3 | 6.66 | 33.7 | 7.37 | 36.1 | 7.98 | 38.5 | 9.69 | 39.7 | 9.90 | 41.2 | 10.27 |
| | 35.0 | 28.9 | 7.17 | 31.3 | 8.18 | 33.7 | 9.09 | 36.1 | 10.10 | 36.8 | 10.19 | 37.6 | 10.28 | 38.5 | 10.38 |
| | 40.0 | 28.9 | 8.89 | 31.3 | 9.90 | 33.7 | 10.40 | 34.3 | 10.60 | 35.0 | 10.91 | 35.9 | 11.21 | 37.6 | 11.46 |
| | 43.0 | 28.9 | 10.30 | 31.3 | 10.50 | 31.8 | 10.70 | 32.5 | 10.91 | 33.6 | 11.21 | 34.7 | 11.51 | 36.1 | 11.81 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 120% | -5.0 | 28.1 | 3.39 | 30.5 | 3.99 | 32.8 | 4.48 | 35.2 | 5.08 | 37.5 | 5.48 | 39.9 | 5.88 | 42.2 | 6.33 |
| | 0.0 | 28.1 | 3.49 | 30.5 | 4.08 | 32.8 | 4.58 | 35.2 | 5.13 | 37.5 | 5.58 | 39.9 | 6.08 | 42.2 | 6.58 |
| | 5.0 | 28.1 | 3.59 | 30.5 | 4.18 | 32.8 | 4.68 | 35.2 | 5.23 | 37.5 | 5.78 | 39.9 | 6.28 | 42.2 | 6.77 |
| | 10.0 | 28.1 | 3.84 | 30.5 | 4.28 | 32.8 | 4.78 | 35.2 | 5.28 | 37.5 | 5.98 | 39.9 | 6.58 | 42.2 | 7.27 |
| | 15.0 | 28.1 | 4.13 | 30.5 | 4.58 | 32.8 | 5.08 | 35.2 | 5.48 | 37.5 | 6.28 | 39.9 | 7.17 | 42.2 | 7.97 |
| | 20.0 | 28.1 | 4.48 | 30.5 | 4.98 | 32.8 | 5.38 | 35.2 | 5.88 | 37.5 | 6.87 | 39.9 | 7.97 | 42.2 | 8.97 |
| | 25.0 | 28.1 | 5.18 | 30.5 | 5.68 | 32.8 | 6.18 | 35.2 | 6.68 | 37.5 | 7.77 | 39.9 | 9.27 | 41.5 | 9.54 |
| | 30.0 | 28.1 | 5.98 | 30.5 | 6.58 | 32.8 | 7.27 | 35.2 | 7.87 | 37.5 | 9.56 | 38.7 | 9.76 | 40.1 | 10.13 |
| | 35.0 | 28.1 | 7.07 | 30.5 | 8.07 | 32.8 | 8.97 | 35.2 | 9.96 | 35.9 | 10.05 | 36.6 | 10.14 | 37.5 | 10.24 |
| | 40.0 | 28.1 | 8.77 | 30.5 | 9.76 | 32.8 | 10.26 | 33.4 | 10.46 | 34.1 | 10.76 | 35.0 | 11.06 | 36.6 | 11.31 |
| | 43.0 | 28.1 | 10.16 | 30.5 | 10.36 | 31.0 | 10.56 | 31.7 | 10.76 | 32.7 | 11.06 | 33.8 | 11.36 | 35.2 | 11.66 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 110% | -5.0 | 27.6 | 3.32 | 29.8 | 3.90 | 32.1 | 4.39 | 34.4 | 4.97 | 36.7 | 5.36 | 39.0 | 5.75 | 41.3 | 6.19 |
| | 0.0 | 27.6 | 3.41 | 29.8 | 4.00 | 32.1 | 4.49 | 34.4 | 5.02 | 36.7 | 5.46 | 39.0 | 5.95 | 41.3 | 6.44 |
| | 5.0 | 27.6 | 3.51 | 29.8 | 4.10 | 32.1 | 4.58 | 34.4 | 5.12 | 36.7 | 5.66 | 39.0 | 6.14 | 41.3 | 6.63 |
| | 10.0 | 27.6 | 3.75 | 29.8 | 4.19 | 32.1 | 4.68 | 34.4 | 5.17 | 36.7 | 5.85 | 39.0 | 6.44 | 41.3 | 7.12 |
| | 15.0 | 27.6 | 4.05 | 29.8 | 4.49 | 32.1 | 4.97 | 34.4 | 5.36 | 36.7 | 6.14 | 39.0 | 7.02 | 41.3 | 7.80 |
| | 20.0 | 27.6 | 4.39 | 29.8 | 4.88 | 32.1 | 5.27 | 34.4 | 5.75 | 36.7 | 6.73 | 39.0 | 7.80 | 41.3 | 8.78 |
| | 25.0 | 27.6 | 5.07 | 29.8 | 5.56 | 32.1 | 6.05 | 34.4 | 6.53 | 36.7 | 7.61 | 39.0 | 9.07 | 40.6 | 9.34 |
| | 30.0 | 27.6 | 5.85 | 29.8 | 6.44 | 32.1 | 7.12 | 34.4 | 7.70 | 36.7 | 9.36 | 37.9 | 9.56 | 39.3 | 9.92 |
| | 35.0 | 27.6 | 6.92 | 29.8 | 7.90 | 32.1 | 8.78 | 34.4 | 9.75 | 35.1 | 9.84 | 35.8 | 9.93 | 36.7 | 10.03 |
| | 40.0 | 27.6 | 8.58 | 29.8 | 9.56 | 32.1 | 10.05 | 32.7 | 10.24 | 33.4 | 10.53 | 34.3 | 10.83 | 35.8 | 11.07 |
| | 43.0 | 27.6 | 9.95 | 29.8 | 10.14 | 30.3 | 10.34 | 31.0 | 10.53 | 32.0 | 10.83 | 33.1 | 11.12 | 34.4 | 11.41 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 100% | -5.0 | 26.8 | 3.26 | 29.0 | 3.83 | 31.3 | 4.31 | 33.5 | 4.89 | 35.7 | 5.27 | 38.0 | 5.65 | 40.2 | 6.08 |
| | 0.0 | 26.8 | 3.35 | 29.0 | 3.93 | 31.3 | 4.41 | 33.5 | 4.93 | 35.7 | 5.36 | 38.0 | 5.84 | 40.2 | 6.32 |
| | 5.0 | 26.8 | 3.45 | 29.0 | 4.02 | 31.3 | 4.50 | 33.5 | 5.03 | 35.7 | 5.56 | 38.0 | 6.04 | 40.2 | 6.51 |
| | 10.0 | 26.8 | 3.69 | 29.0 | 4.12 | 31.3 | 4.60 | 33.5 | 5.08 | 35.7 | 5.75 | 38.0 | 6.32 | 40.2 | 6.99 |
| | 15.0 | 26.8 | 3.98 | 29.0 | 4.41 | 31.3 | 4.89 | 33.5 | 5.27 | 35.7 | 6.04 | 38.0 | 6.90 | 40.2 | 7.66 |
| | 20.0 | 26.8 | 4.31 | 29.0 | 4.79 | 31.3 | 5.17 | 33.5 | 5.65 | 35.7 | 6.61 | 38.0 | 7.66 | 40.2 | 8.62 |
| | 25.0 | 26.8 | 4.98 | 29.0 | 5.46 | 31.3 | 5.94 | 33.5 | 6.42 | 35.7 | 7.47 | 38.0 | 8.91 | 39.5 | 9.18 |
| | 30.0 | 26.8 | 5.75 | 29.0 | 6.32 | 31.3 | 6.99 | 33.5 | 7.57 | 35.7 | 9.20 | 36.9 | 9.39 | 38.2 | 9.74 |
| | 35.0 | 26.8 | 6.80 | 29.0 | 7.76 | 31.3 | 8.62 | 33.5 | 9.58 | 34.2 | 9.67 | 34.8 | 9.75 | 35.7 | 9.85 |
| | 40.0 | 26.8 | 8.43 | 29.0 | 9.39 | 31.3 | 9.87 | 31.8 | 10.06 | 32.5 | 10.35 | 33.3 | 10.63 | 34.8 | 10.87 |
| | 43.0 | 26.8 | 9.77 | 29.0 | 9.96 | 29.5 | 10.15 | 30.2 | 10.35 | 31.2 | 10.63 | 32.2 | 10.92 | 33.5 | 11.21 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 90% | -5.0 | 24.1 | 2.83 | 26.1 | 3.33 | 28.1 | 3.75 | 30.2 | 4.25 | 32.1 | 4.58 | 34.2 | 4.92 | 36.2 | 5.29 |
| | 0.0 | 24.1 | 2.92 | 26.1 | 3.42 | 28.1 | 3.83 | 30.2 | 4.29 | 32.1 | 4.67 | 34.2 | 5.08 | 36.2 | 5.50 |
| | 5.0 | 24.1 | 3.00 | 26.1 | 3.50 | 28.1 | 3.92 | 30.2 | 4.38 | 32.1 | 4.83 | 34.2 | 5.25 | 36.2 | 5.67 |
| | 10.0 | 24.1 | 3.21 | 26.1 | 3.58 | 28.1 | 4.00 | 30.2 | 4.42 | 32.1 | 5.00 | 34.2 | 5.50 | 36.2 | 6.08 |
| | 15.0 | 24.1 | 3.46 | 26.1 | 3.83 | 28.1 | 4.25 | 30.2 | 4.58 | 32.1 | 5.25 | 34.2 | 6.00 | 36.2 | 6.67 |
| | 20.0 | 24.1 | 3.75 | 26.1 | 4.17 | 28.1 | 4.50 | 30.2 | 4.92 | 32.1 | 5.75 | 34.2 | 6.67 | 36.2 | 7.50 |
| | 25.0 | 24.1 | 4.33 | 26.1 | 4.75 | 28.1 | 5.17 | 30.2 | 5.58 | 32.1 | 6.50 | 34.2 | 7.75 | 35.6 | 7.98 |
| | 30.0 | 24.1 | 5.00 | 26.1 | 5.50 | 28.1 | 6.08 | 30.2 | 6.58 | 32.1 | 8.00 | 33.2 | 8.17 | 34.4 | 8.48 |
| | 35.0 | 24.1 | 5.92 | 26.1 | 6.75 | 28.1 | 7.50 | 30.2 | 8.33 | 30.8 | 8.41 | 31.4 | 8.48 | 32.1 | 8.57 |
| | 40.0 | 24.1 | 7.33 | 26.1 | 8.17 | 28.1 | 8.58 | 28.6 | 8.75 | 29.2 | 9.00 | 30.0 | 9.25 | 31.4 | 9.46 |
| | 43.0 | 24.1 | 8.50 | 26.1 | 8.67 | 26.5 | 8.83 | 27.1 | 9.00 | 28.0 | 9.25 | 28.9 | 9.50 | 30.2 | 9.75 |

# 5. SPW-C1155DXHN8 (Cooling)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 80% | -5.0 | 21.4 | 2.44 | 23.2 | 2.87 | 25.0 | 3.23 | 26.8 | 3.66 | 28.6 | 3.95 | 30.4 | 4.24 | 32.2 | 4.56 |
| | 0.0 | 21.4 | 2.51 | 23.2 | 2.95 | 25.0 | 3.31 | 26.8 | 3.70 | 28.6 | 4.02 | 30.4 | 4.38 | 32.2 | 4.74 |
| | 5.0 | 21.4 | 2.59 | 23.2 | 3.02 | 25.0 | 3.38 | 26.8 | 3.77 | 28.6 | 4.17 | 30.4 | 4.53 | 32.2 | 4.89 |
| | 10.0 | 21.4 | 2.77 | 23.2 | 3.09 | 25.0 | 3.45 | 26.8 | 3.81 | 28.6 | 4.31 | 30.4 | 4.74 | 32.2 | 5.25 |
| | 15.0 | 21.4 | 2.98 | 23.2 | 3.31 | 25.0 | 3.66 | 26.8 | 3.95 | 28.6 | 4.53 | 30.4 | 5.17 | 32.2 | 5.75 |
| | 20.0 | 21.4 | 3.23 | 23.2 | 3.59 | 25.0 | 3.88 | 26.8 | 4.24 | 28.6 | 4.96 | 30.4 | 5.75 | 32.2 | 6.47 |
| | 25.0 | 21.4 | 3.74 | 23.2 | 4.10 | 25.0 | 4.45 | 26.8 | 4.81 | 28.6 | 5.60 | 30.4 | 6.68 | 31.6 | 6.88 |
| | 30.0 | 21.4 | 4.31 | 23.2 | 4.74 | 25.0 | 5.25 | 26.8 | 5.68 | 28.6 | 6.90 | 29.5 | 7.04 | 30.6 | 7.31 |
| | 35.0 | 21.4 | 5.10 | 23.2 | 5.82 | 25.0 | 6.47 | 26.8 | 7.19 | 27.3 | 7.25 | 27.9 | 7.31 | 28.6 | 7.39 |
| | 40.0 | 21.4 | 6.32 | 23.2 | 7.04 | 25.0 | 7.40 | 25.5 | 7.54 | 26.0 | 7.76 | 26.7 | 7.98 | 27.9 | 8.15 |
| | 43.0 | 21.4 | 7.33 | 23.2 | 7.47 | 23.6 | 7.62 | 24.1 | 7.76 | 24.9 | 7.98 | 25.7 | 8.19 | 26.8 | 8.41 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 70% | -5.0 | 18.8 | 2.05 | 20.3 | 2.41 | 21.9 | 2.72 | 23.5 | 3.08 | 25.0 | 3.32 | 26.6 | 3.56 | 28.1 | 3.83 |
| | 0.0 | 18.8 | 2.11 | 20.3 | 2.47 | 21.9 | 2.78 | 23.5 | 3.11 | 25.0 | 3.38 | 26.6 | 3.68 | 28.1 | 3.98 |
| | 5.0 | 18.8 | 2.17 | 20.3 | 2.53 | 21.9 | 2.84 | 23.5 | 3.17 | 25.0 | 3.50 | 26.6 | 3.80 | 28.1 | 4.10 |
| | 10.0 | 18.8 | 2.32 | 20.3 | 2.60 | 21.9 | 2.90 | 23.5 | 3.20 | 25.0 | 3.62 | 26.6 | 3.98 | 28.1 | 4.41 |
| | 15.0 | 18.8 | 2.50 | 20.3 | 2.78 | 21.9 | 3.08 | 23.5 | 3.32 | 25.0 | 3.80 | 26.6 | 4.35 | 28.1 | 4.83 |
| | 20.0 | 18.8 | 2.72 | 20.3 | 3.02 | 21.9 | 3.26 | 23.5 | 3.56 | 25.0 | 4.16 | 26.6 | 4.83 | 28.1 | 5.43 |
| | 25.0 | 18.8 | 3.14 | 20.3 | 3.44 | 21.9 | 3.74 | 23.5 | 4.04 | 25.0 | 4.71 | 26.6 | 5.61 | 27.7 | 5.78 |
| | 30.0 | 18.8 | 3.62 | 20.3 | 3.98 | 21.9 | 4.41 | 23.5 | 4.77 | 25.0 | 5.79 | 25.8 | 5.91 | 26.7 | 6.14 |
| | 35.0 | 18.8 | 4.29 | 20.3 | 4.89 | 21.9 | 5.43 | 23.5 | 6.04 | 23.9 | 6.09 | 24.4 | 6.14 | 25.0 | 6.20 |
| | 40.0 | 18.8 | 5.31 | 20.3 | 5.91 | 21.9 | 6.22 | 22.3 | 6.34 | 22.7 | 6.52 | 23.3 | 6.70 | 24.4 | 6.85 |
| | 43.0 | 18.8 | 6.16 | 20.3 | 6.28 | 20.6 | 6.40 | 21.1 | 6.52 | 21.8 | 6.70 | 22.5 | 6.88 | 23.5 | 7.06 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 60% | -5.0 | 16.1 | 1.66 | 17.4 | 1.95 | 18.8 | 2.20 | 20.1 | 2.49 | 21.4 | 2.69 | 22.8 | 2.88 | 24.1 | 3.10 |
| | 0.0 | 16.1 | 1.71 | 17.4 | 2.00 | 18.8 | 2.25 | 20.1 | 2.52 | 21.4 | 2.74 | 22.8 | 2.98 | 24.1 | 3.22 |
| | 5.0 | 16.1 | 1.76 | 17.4 | 2.05 | 18.8 | 2.30 | 20.1 | 2.57 | 21.4 | 2.83 | 22.8 | 3.08 | 24.1 | 3.32 |
| | 10.0 | 16.1 | 1.88 | 17.4 | 2.10 | 18.8 | 2.35 | 20.1 | 2.59 | 21.4 | 2.93 | 22.8 | 3.22 | 24.1 | 3.57 |
| | 15.0 | 16.1 | 2.03 | 17.4 | 2.25 | 18.8 | 2.49 | 20.1 | 2.69 | 21.4 | 3.08 | 22.8 | 3.52 | 24.1 | 3.91 |
| | 20.0 | 16.1 | 2.20 | 17.4 | 2.44 | 18.8 | 2.64 | 20.1 | 2.88 | 21.4 | 3.37 | 22.8 | 3.91 | 24.1 | 4.40 |
| | 25.0 | 16.1 | 2.54 | 17.4 | 2.78 | 18.8 | 3.03 | 20.1 | 3.27 | 21.4 | 3.81 | 22.8 | 4.54 | 23.7 | 4.68 |
| | 30.0 | 16.1 | 2.93 | 17.4 | 3.22 | 18.8 | 3.57 | 20.1 | 3.86 | 21.4 | 4.69 | 22.1 | 4.79 | 22.9 | 4.97 |
| | 35.0 | 16.1 | 3.47 | 17.4 | 3.96 | 18.8 | 4.40 | 20.1 | 4.89 | 20.5 | 4.93 | 20.9 | 4.97 | 21.4 | 5.02 |
| | 40.0 | 16.1 | 4.30 | 17.4 | 4.79 | 18.8 | 5.03 | 19.1 | 5.13 | 19.5 | 5.28 | 20.0 | 5.42 | 20.9 | 5.55 |
| | 43.0 | 16.1 | 4.98 | 17.4 | 5.08 | 17.7 | 5.18 | 18.1 | 5.28 | 18.7 | 5.42 | 19.3 | 5.57 | 20.1 | 5.72 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 50% | -5.0 | 13.4 | 1.27 | 14.5 | 1.49 | 15.6 | 1.68 | 16.8 | 1.91 | 17.9 | 2.05 | 19.0 | 2.20 | 20.1 | 2.37 |
| | 0.0 | 13.4 | 1.31 | 14.5 | 1.53 | 15.6 | 1.72 | 16.8 | 1.92 | 17.9 | 2.09 | 19.0 | 2.28 | 20.1 | 2.47 |
| | 5.0 | 13.4 | 1.35 | 14.5 | 1.57 | 15.6 | 1.76 | 16.8 | 1.96 | 17.9 | 2.17 | 19.0 | 2.35 | 20.1 | 2.54 |
| | 10.0 | 13.4 | 1.44 | 14.5 | 1.61 | 15.6 | 1.79 | 16.8 | 1.98 | 17.9 | 2.24 | 19.0 | 2.47 | 20.1 | 2.73 |
| | 15.0 | 13.4 | 1.55 | 14.5 | 1.72 | 15.6 | 1.91 | 16.8 | 2.05 | 17.9 | 2.35 | 19.0 | 2.69 | 20.1 | 2.99 |
| | 20.0 | 13.4 | 1.68 | 14.5 | 1.87 | 15.6 | 2.02 | 16.8 | 2.20 | 17.9 | 2.58 | 19.0 | 2.99 | 20.1 | 3.36 |
| | 25.0 | 13.4 | 1.94 | 14.5 | 2.13 | 15.6 | 2.32 | 16.8 | 2.50 | 17.9 | 2.91 | 19.0 | 3.47 | 19.8 | 3.58 |
| | 30.0 | 13.4 | 2.24 | 14.5 | 2.47 | 15.6 | 2.73 | 16.8 | 2.95 | 17.9 | 3.59 | 18.4 | 3.66 | 19.1 | 3.80 |
| | 35.0 | 13.4 | 2.65 | 14.5 | 3.03 | 15.6 | 3.36 | 16.8 | 3.74 | 17.1 | 3.77 | 17.4 | 3.80 | 17.9 | 3.84 |
| | 40.0 | 13.4 | 3.29 | 14.5 | 3.66 | 15.6 | 3.85 | 15.9 | 3.92 | 16.2 | 4.04 | 16.7 | 4.15 | 17.4 | 4.24 |
| | 43.0 | 13.4 | 3.81 | 14.5 | 3.89 | 14.7 | 3.96 | 15.1 | 4.04 | 15.6 | 4.15 | 16.1 | 4.26 | 16.8 | 4.37 |

# 6. SPW-C1155DXHN8 (Heating)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 130% | -19.8 | -20.0 | 26.1 | 8.67 | 25.0 | 8.52 | 23.9 | 8.36 | 23.4 | 8.28 | 22.8 | 8.21 | 21.8 | 8.05 | 20.7 | 7.89 |
| | -14.7 | -15.0 | 29.9 | 9.23 | 28.8 | 9.07 | 27.8 | 8.92 | 27.2 | 8.84 | 26.7 | 8.76 | 25.6 | 8.61 | 24.5 | 8.45 |
| | -9.6 | -10.0 | 33.8 | 9.79 | 32.7 | 9.63 | 31.6 | 9.47 | 31.1 | 9.40 | 30.5 | 9.32 | 29.5 | 9.16 | 28.4 | 9.01 |
| | -4.4 | -5.0 | 37.6 | 10.34 | 36.6 | 10.19 | 35.5 | 10.03 | 34.9 | 9.95 | 34.4 | 9.87 | 33.3 | 9.72 | 32.3 | 9.56 |
| | -1.8 | -2.5 | 39.6 | 10.62 | 38.5 | 10.46 | 37.4 | 10.31 | 36.9 | 10.23 | 36.3 | 10.15 | 35.3 | 10.00 | 33.6 | 9.46 |
| | 0.8 | 0.0 | 41.5 | 10.90 | 40.4 | 10.74 | 39.3 | 10.59 | 38.8 | 10.51 | 38.3 | 10.43 | 36.3 | 9.77 | 33.6 | 8.91 |
| | 2.8 | 2.0 | 43.0 | 11.12 | 42.0 | 10.96 | 40.9 | 10.81 | 40.4 | 10.62 | 39.1 | 10.19 | 36.3 | 9.34 | 33.6 | 8.48 |
| | 6.0 | 5.0 | 45.4 | 11.45 | 44.3 | 11.26 | 41.8 | 10.40 | 40.4 | 9.97 | 39.1 | 9.54 | 36.3 | 8.68 | 33.6 | 7.83 |
| | 7.0 | 6.0 | 46.1 | 11.56 | 44.5 | 11.04 | 41.8 | 10.18 | 40.4 | 9.75 | 39.1 | 9.32 | 36.3 | 8.47 | 33.6 | 7.61 |
| | 8.6 | 7.5 | 47.3 | 11.57 | 44.5 | 10.71 | 41.8 | 9.86 | 40.4 | 9.43 | 39.1 | 9.00 | 36.3 | 8.14 | 33.6 | 7.28 |
| | 11.2 | 10.0 | 47.3 | 11.03 | 44.5 | 10.17 | 41.8 | 9.31 | 40.4 | 8.88 | 39.1 | 8.45 | 36.3 | 7.60 | 33.6 | 6.74 |
| | 16.4 | 15.0 | 47.3 | 9.94 | 44.5 | 9.08 | 41.8 | 8.23 | 40.4 | 7.80 | 39.1 | 7.37 | 36.3 | 6.51 | 33.6 | 5.65 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 120% | -19.8 | -20.0 | 25.4 | 8.63 | 24.3 | 8.48 | 23.3 | 8.32 | 22.8 | 8.24 | 22.2 | 8.17 | 21.2 | 8.01 | 20.1 | 7.85 |
| | -14.7 | -15.0 | 29.1 | 9.18 | 28.1 | 9.03 | 27.0 | 8.87 | 26.5 | 8.80 | 26.0 | 8.72 | 24.9 | 8.56 | 23.9 | 8.41 |
| | -9.6 | -10.0 | 32.9 | 9.74 | 31.9 | 9.58 | 30.8 | 9.43 | 30.3 | 9.35 | 29.8 | 9.27 | 28.7 | 9.12 | 27.7 | 8.96 |
| | -4.4 | -5.0 | 36.7 | 10.29 | 35.6 | 10.14 | 34.6 | 9.98 | 34.0 | 9.90 | 33.5 | 9.82 | 32.5 | 9.67 | 31.4 | 9.51 |
| | -1.8 | -2.5 | 38.5 | 10.57 | 37.5 | 10.41 | 36.4 | 10.26 | 35.9 | 10.18 | 35.4 | 10.10 | 34.3 | 9.95 | 32.7 | 9.41 |
| | 0.8 | 0.0 | 40.4 | 10.84 | 39.4 | 10.69 | 38.3 | 10.53 | 37.8 | 10.46 | 37.3 | 10.38 | 35.4 | 9.72 | 32.7 | 8.87 |
| | 2.8 | 2.0 | 41.9 | 11.07 | 40.9 | 10.91 | 39.8 | 10.75 | 39.3 | 10.57 | 38.0 | 10.14 | 35.4 | 9.29 | 32.7 | 8.44 |
| | 6.0 | 5.0 | 44.2 | 11.40 | 43.1 | 11.20 | 40.7 | 10.35 | 39.4 | 9.92 | 38.0 | 9.49 | 35.4 | 8.64 | 32.7 | 7.79 |
| | 7.0 | 6.0 | 44.9 | 11.51 | 43.4 | 10.99 | 40.7 | 10.13 | 39.4 | 9.71 | 38.0 | 9.28 | 35.4 | 8.42 | 32.7 | 7.57 |
| | 8.6 | 7.5 | 46.1 | 11.52 | 43.4 | 10.66 | 40.7 | 9.81 | 39.4 | 9.38 | 38.0 | 8.95 | 35.4 | 8.10 | 32.7 | 7.25 |
| | 11.2 | 10.0 | 46.1 | 10.98 | 43.4 | 10.12 | 40.7 | 9.27 | 39.4 | 8.84 | 38.0 | 8.41 | 35.4 | 7.56 | 32.7 | 6.70 |
| | 16.4 | 15.0 | 46.1 | 9.89 | 43.4 | 9.04 | 40.7 | 8.18 | 39.4 | 7.76 | 38.0 | 7.33 | 35.4 | 6.48 | 32.7 | 5.62 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 110% | -19.8 | -20.0 | 24.8 | 8.59 | 23.8 | 8.43 | 22.8 | 8.28 | 22.3 | 8.20 | 21.8 | 8.12 | 20.7 | 7.97 | 19.7 | 7.82 |
| | -14.7 | -15.0 | 28.5 | 9.14 | 27.5 | 8.98 | 26.5 | 8.83 | 26.0 | 8.75 | 25.5 | 8.68 | 24.4 | 8.52 | 23.4 | 8.37 |
| | -9.6 | -10.0 | 32.2 | 9.69 | 31.2 | 9.53 | 30.2 | 9.38 | 29.6 | 9.30 | 29.1 | 9.23 | 28.1 | 9.07 | 27.1 | 8.92 |
| | -4.4 | -5.0 | 35.9 | 10.24 | 34.9 | 10.09 | 33.8 | 9.93 | 33.3 | 9.85 | 32.8 | 9.78 | 31.8 | 9.62 | 30.8 | 9.47 |
| | -1.8 | -2.5 | 37.7 | 10.52 | 36.7 | 10.36 | 35.7 | 10.21 | 35.2 | 10.13 | 34.7 | 10.05 | 33.6 | 9.90 | 32.0 | 9.36 |
| | 0.8 | 0.0 | 39.6 | 10.79 | 38.5 | 10.64 | 37.5 | 10.48 | 37.0 | 10.40 | 36.5 | 10.33 | 34.6 | 9.67 | 32.0 | 8.83 |
| | 2.8 | 2.0 | 41.0 | 11.01 | 40.0 | 10.86 | 39.0 | 10.70 | 38.5 | 10.52 | 37.2 | 10.09 | 34.6 | 9.24 | 32.0 | 8.39 |
| | 6.0 | 5.0 | 43.3 | 11.34 | 42.2 | 11.15 | 39.9 | 10.30 | 38.6 | 9.87 | 37.2 | 9.45 | 34.6 | 8.60 | 32.0 | 7.75 |
| | 7.0 | 6.0 | 44.0 | 11.45 | 42.5 | 10.93 | 39.9 | 10.08 | 38.6 | 9.66 | 37.2 | 9.23 | 34.6 | 8.38 | 32.0 | 7.53 |
| | 8.6 | 7.5 | 45.1 | 11.46 | 42.5 | 10.61 | 39.9 | 9.76 | 38.6 | 9.33 | 37.2 | 8.91 | 34.6 | 8.06 | 32.0 | 7.21 |
| | 11.2 | 10.0 | 45.1 | 10.92 | 42.5 | 10.07 | 39.9 | 9.22 | 38.6 | 8.80 | 37.2 | 8.37 | 34.6 | 7.52 | 32.0 | 6.67 |
| | 16.4 | 15.0 | 45.1 | 9.84 | 42.5 | 8.99 | 39.9 | 8.14 | 38.6 | 7.72 | 37.2 | 7.29 | 34.6 | 6.44 | 32.0 | 5.59 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 100% | -19.8 | -20.0 | 24.2 | 8.54 | 23.2 | 8.38 | 22.2 | 8.23 | 21.7 | 8.15 | 21.2 | 8.08 | 20.2 | 7.92 | 19.2 | 7.77 |
| | -14.7 | -15.0 | 27.8 | 9.08 | 26.8 | 8.93 | 25.8 | 8.78 | 25.3 | 8.70 | 24.8 | 8.62 | 23.8 | 8.47 | 22.8 | 8.32 |
| | -9.6 | -10.0 | 31.3 | 9.63 | 30.3 | 9.48 | 29.3 | 9.32 | 28.8 | 9.25 | 28.3 | 9.17 | 27.3 | 9.02 | 26.3 | 8.86 |
| | -4.4 | -5.0 | 34.9 | 10.18 | 33.9 | 10.03 | 32.9 | 9.87 | 32.4 | 9.79 | 31.9 | 9.72 | 30.9 | 9.56 | 29.9 | 9.41 |
| | -1.8 | -2.5 | 36.7 | 10.45 | 35.7 | 10.30 | 34.7 | 10.15 | 34.2 | 10.07 | 33.7 | 9.99 | 32.7 | 9.84 | 31.1 | 9.31 |
| | 0.8 | 0.0 | 38.5 | 10.73 | 37.5 | 10.57 | 36.5 | 10.42 | 36.0 | 10.34 | 35.5 | 10.27 | 33.7 | 9.62 | 31.1 | 8.77 |
| | 2.8 | 2.0 | 39.9 | 10.94 | 38.9 | 10.79 | 37.9 | 10.64 | 37.4 | 10.46 | 36.2 | 10.03 | 33.7 | 9.19 | 31.1 | 8.34 |
| | 6.0 | 5.0 | 42.1 | 11.27 | 41.1 | 11.08 | 38.8 | 10.24 | 37.5 | 9.81 | 36.2 | 9.39 | 33.7 | 8.55 | 31.1 | 7.70 |
| | 7.0 | 6.0 | 42.8 | 11.38 | 41.3 | 10.87 | 38.8 | 10.02 | 37.5 | 9.60 | 36.2 | 9.18 | 33.7 | 8.33 | 31.1 | 7.49 |
| | 8.6 | 7.5 | 43.9 | 11.39 | 41.3 | 10.55 | 38.8 | 9.70 | 37.5 | 9.28 | 36.2 | 8.86 | 33.7 | 8.01 | 31.1 | 7.17 |
| | 11.2 | 10.0 | 43.9 | 10.86 | 41.3 | 10.01 | 38.8 | 9.17 | 37.5 | 8.74 | 36.2 | 8.32 | 33.7 | 7.48 | 31.1 | 6.63 |
| | 16.4 | 15.0 | 43.9 | 9.79 | 41.3 | 8.94 | 38.8 | 8.10 | 37.5 | 7.67 | 36.2 | 7.25 | 33.7 | 6.41 | 31.1 | 5.56 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 90% | -19.8 | -20.0 | 21.8 | 7.68 | 20.9 | 7.55 | 20.0 | 7.41 | 19.5 | 7.34 | 19.1 | 7.27 | 18.2 | 7.13 | 17.3 | 6.99 |
| | -14.7 | -15.0 | 25.0 | 8.18 | 24.1 | 8.04 | 23.2 | 7.90 | 22.7 | 7.83 | 22.3 | 7.76 | 21.4 | 7.62 | 20.5 | 7.48 |
| | -9.6 | -10.0 | 28.2 | 8.67 | 27.3 | 8.53 | 26.4 | 8.39 | 26.0 | 8.32 | 25.5 | 8.25 | 24.6 | 8.12 | 23.7 | 7.98 |
| | -4.4 | -5.0 | 31.4 | 9.16 | 30.5 | 9.02 | 29.6 | 8.88 | 29.2 | 8.82 | 28.7 | 8.75 | 27.8 | 8.61 | 26.9 | 8.47 |
| | -1.8 | -2.5 | 33.0 | 9.41 | 32.1 | 9.27 | 31.2 | 9.13 | 30.8 | 9.06 | 30.3 | 8.99 | 29.4 | 8.85 | 28.0 | 8.38 |
| | 0.8 | 0.0 | 34.6 | 9.65 | 33.7 | 9.52 | 32.8 | 9.38 | 32.4 | 9.31 | 32.0 | 9.24 | 30.3 | 8.66 | 28.0 | 7.90 |
| | 2.8 | 2.0 | 35.9 | 9.85 | 35.0 | 9.71 | 34.1 | 9.57 | 33.7 | 9.41 | 32.6 | 9.03 | 30.3 | 8.27 | 28.0 | 7.51 |
| | 6.0 | 5.0 | 37.9 | 10.15 | 37.0 | 9.97 | 34.9 | 9.21 | 33.8 | 8.83 | 32.6 | 8.45 | 30.3 | 7.69 | 28.0 | 6.93 |
| | 7.0 | 6.0 | 38.5 | 10.24 | 37.2 | 9.78 | 34.9 | 9.02 | 33.8 | 8.64 | 32.6 | 8.26 | 30.3 | 7.50 | 28.0 | 6.74 |
| | 8.6 | 7.5 | 39.5 | 10.25 | 37.2 | 9.49 | 34.9 | 8.73 | 33.8 | 8.35 | 32.6 | 7.97 | 30.3 | 7.21 | 28.0 | 6.45 |
| | 11.2 | 10.0 | 39.5 | 9.77 | 37.2 | 9.01 | 34.9 | 8.25 | 33.8 | 7.87 | 32.6 | 7.49 | 30.3 | 6.73 | 28.0 | 5.97 |
| | 16.4 | 15.0 | 39.5 | 8.81 | 37.2 | 8.05 | 34.9 | 7.29 | 33.8 | 6.91 | 32.6 | 6.53 | 30.3 | 5.77 | 28.0 | 5.01 |

# 6. SPW-C1155DXHN8 (Heating)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 80% | -19.8 | -20.0 | 19.3 | 6.74 | 18.5 | 6.62 | 17.7 | 6.50 | 17.3 | 6.44 | 16.9 | 6.38 | 16.1 | 6.26 | 15.3 | 6.14 |
| | -14.7 | -15.0 | 22.2 | 7.18 | 21.4 | 7.06 | 20.6 | 6.93 | 20.2 | 6.87 | 19.8 | 6.81 | 19.0 | 6.69 | 18.2 | 6.57 |
| | -9.6 | -10.0 | 25.1 | 7.61 | 24.3 | 7.49 | 23.5 | 7.37 | 23.1 | 7.31 | 22.7 | 7.24 | 21.9 | 7.12 | 21.1 | 7.00 |
| | -4.4 | -5.0 | 27.9 | 8.04 | 27.1 | 7.92 | 26.3 | 7.80 | 25.9 | 7.74 | 25.5 | 7.68 | 24.7 | 7.56 | 23.9 | 7.43 |
| | -1.8 | -2.5 | 29.4 | 8.26 | 28.6 | 8.14 | 27.8 | 8.01 | 27.4 | 7.95 | 27.0 | 7.89 | 26.2 | 7.77 | 24.9 | 7.35 |
| | 0.8 | 0.0 | 30.8 | 8.47 | 30.0 | 8.35 | 29.2 | 8.23 | 28.8 | 8.17 | 28.4 | 8.11 | 26.9 | 7.60 | 24.9 | 6.93 |
| | 2.8 | 2.0 | 31.9 | 8.65 | 31.1 | 8.53 | 30.3 | 8.40 | 29.9 | 8.26 | 29.0 | 7.93 | 26.9 | 7.26 | 24.9 | 6.59 |
| | 6.0 | 5.0 | 33.7 | 8.91 | 32.9 | 8.75 | 31.0 | 8.09 | 30.0 | 7.75 | 29.0 | 7.42 | 26.9 | 6.75 | 24.9 | 6.08 |
| | 7.0 | 6.0 | 34.2 | 8.99 | 33.1 | 8.59 | 31.0 | 7.92 | 30.0 | 7.58 | 29.0 | 7.25 | 26.9 | 6.58 | 24.9 | 5.92 |
| | 8.6 | 7.5 | 35.1 | 9.00 | 33.1 | 8.33 | 31.0 | 7.66 | 30.0 | 7.33 | 29.0 | 7.00 | 26.9 | 6.33 | 24.9 | 5.66 |
| | 11.2 | 10.0 | 35.1 | 8.58 | 33.1 | 7.91 | 31.0 | 7.24 | 30.0 | 6.91 | 29.0 | 6.57 | 26.9 | 5.91 | 24.9 | 5.24 |
| | 16.4 | 15.0 | 35.1 | 7.73 | 33.1 | 7.06 | 31.0 | 6.40 | 30.0 | 6.06 | 29.0 | 5.73 | 26.9 | 5.06 | 24.9 | 4.39 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 70% | -19.8 | -20.0 | 16.9 | 5.81 | 16.2 | 5.70 | 15.5 | 5.60 | 15.2 | 5.54 | 14.8 | 5.49 | 14.1 | 5.39 | 13.4 | 5.28 |
| | -14.7 | -15.0 | 19.4 | 6.18 | 18.7 | 6.07 | 18.0 | 5.97 | 17.7 | 5.92 | 17.3 | 5.86 | 16.6 | 5.76 | 15.9 | 5.66 |
| | -9.6 | -10.0 | 21.9 | 6.55 | 21.2 | 6.45 | 20.5 | 6.34 | 20.2 | 6.29 | 19.8 | 6.24 | 19.1 | 6.13 | 18.4 | 6.03 |
| | -4.4 | -5.0 | 24.4 | 6.92 | 23.7 | 6.82 | 23.0 | 6.71 | 22.7 | 6.66 | 22.3 | 6.61 | 21.6 | 6.50 | 20.9 | 6.40 |
| | -1.8 | -2.5 | 25.7 | 7.11 | 25.0 | 7.00 | 24.3 | 6.90 | 23.9 | 6.85 | 23.6 | 6.79 | 22.9 | 6.69 | 21.8 | 6.33 |
| | 0.8 | 0.0 | 26.9 | 7.29 | 26.2 | 7.19 | 25.5 | 7.08 | 25.2 | 7.03 | 24.9 | 6.98 | 23.6 | 6.54 | 21.8 | 5.97 |
| | 2.8 | 2.0 | 27.9 | 7.44 | 27.3 | 7.34 | 26.6 | 7.23 | 26.2 | 7.11 | 25.4 | 6.82 | 23.6 | 6.25 | 21.8 | 5.67 |
| | 6.0 | 5.0 | 29.5 | 7.67 | 28.8 | 7.54 | 27.1 | 6.96 | 26.3 | 6.67 | 25.4 | 6.39 | 23.6 | 5.81 | 21.8 | 5.24 |
| | 7.0 | 6.0 | 30.0 | 7.74 | 28.9 | 7.39 | 27.1 | 6.82 | 26.3 | 6.53 | 25.4 | 6.24 | 23.6 | 5.67 | 21.8 | 5.09 |
| | 8.6 | 7.5 | 30.7 | 7.75 | 28.9 | 7.17 | 27.1 | 6.60 | 26.3 | 6.31 | 25.4 | 6.02 | 23.6 | 5.45 | 21.8 | 4.87 |
| | 11.2 | 10.0 | 30.7 | 7.38 | 28.9 | 6.81 | 27.1 | 6.23 | 26.3 | 5.95 | 25.4 | 5.66 | 23.6 | 5.08 | 21.8 | 4.51 |
| | 16.4 | 15.0 | 30.7 | 6.65 | 28.9 | 6.08 | 27.1 | 5.51 | 26.3 | 5.22 | 25.4 | 4.93 | 23.6 | 4.36 | 21.8 | 3.78 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 60% | -19.8 | -20.0 | 14.5 | 4.95 | 13.9 | 4.86 | 13.3 | 4.77 | 13.0 | 4.73 | 12.7 | 4.68 | 12.1 | 4.60 | 11.5 | 4.51 |
| | -14.7 | -15.0 | 16.7 | 5.27 | 16.1 | 5.18 | 15.5 | 5.09 | 15.2 | 5.05 | 14.9 | 5.00 | 14.3 | 4.91 | 13.7 | 4.82 |
| | -9.6 | -10.0 | 18.8 | 5.59 | 18.2 | 5.50 | 17.6 | 5.41 | 17.3 | 5.36 | 17.0 | 5.32 | 16.4 | 5.23 | 15.8 | 5.14 |
| | -4.4 | -5.0 | 20.9 | 5.90 | 20.3 | 5.81 | 19.8 | 5.73 | 19.5 | 5.68 | 19.2 | 5.64 | 18.6 | 5.55 | 18.0 | 5.46 |
| | -1.8 | -2.5 | 22.0 | 6.06 | 21.4 | 5.97 | 20.8 | 5.88 | 20.5 | 5.84 | 20.2 | 5.80 | 19.6 | 5.71 | 18.7 | 5.40 |
| | 0.8 | 0.0 | 23.1 | 6.22 | 22.5 | 6.13 | 21.9 | 6.04 | 21.6 | 6.00 | 21.3 | 5.95 | 20.2 | 5.58 | 18.7 | 5.09 |
| | 2.8 | 2.0 | 24.0 | 6.35 | 23.4 | 6.26 | 22.8 | 6.17 | 22.5 | 6.06 | 21.7 | 5.82 | 20.2 | 5.33 | 18.7 | 4.84 |
| | 6.0 | 5.0 | 25.2 | 6.54 | 24.6 | 6.43 | 23.3 | 5.94 | 22.5 | 5.69 | 21.7 | 5.45 | 20.2 | 4.96 | 18.7 | 4.47 |
| | 7.0 | 6.0 | 25.7 | 6.60 | 24.8 | 6.30 | 23.3 | 5.81 | 22.5 | 5.57 | 21.7 | 5.32 | 20.2 | 4.83 | 18.7 | 4.34 |
| | 8.6 | 7.5 | 26.3 | 6.61 | 24.8 | 6.12 | 23.3 | 5.63 | 22.5 | 5.38 | 21.7 | 5.14 | 20.2 | 4.65 | 18.7 | 4.16 |
| | 11.2 | 10.0 | 26.3 | 6.30 | 24.8 | 5.81 | 23.3 | 5.32 | 22.5 | 5.07 | 21.7 | 4.83 | 20.2 | 4.34 | 18.7 | 3.85 |
| | 16.4 | 15.0 | 26.3 | 5.68 | 24.8 | 5.19 | 23.3 | 4.70 | 22.5 | 4.45 | 21.7 | 4.21 | 20.2 | 3.72 | 18.7 | 3.23 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 50% | -19.8 | -20.0 | 12.1 | 4.01 | 11.6 | 3.94 | 11.1 | 3.87 | 10.8 | 3.83 | 10.6 | 3.80 | 10.1 | 3.72 | 9.6 | 3.65 |
| | -14.7 | -15.0 | 13.9 | 4.27 | 13.4 | 4.20 | 12.9 | 4.13 | 12.6 | 4.09 | 12.4 | 4.05 | 11.9 | 3.98 | 11.4 | 3.91 |
| | -9.6 | -10.0 | 15.7 | 4.53 | 15.2 | 4.45 | 14.7 | 4.38 | 14.4 | 4.35 | 14.2 | 4.31 | 13.7 | 4..24 | 13.2 | 4.17 |
| | -4.4 | -5.0 | 17.5 | 4.78 | 17.0 | 4.71 | 16.5 | 4.64 | 16.2 | 4.60 | 16.0 | 4.57 | 15.5 | 4.50 | 15.0 | 4.42 |
| | -1.8 | -2.5 | 18.4 | 4.91 | 17.9 | 4.84 | 17.4 | 4.77 | 17.1 | 4.73 | 16.9 | 4.70 | 16.4 | 4.62 | 15.6 | 4.37 |
| | 0.8 | 0.0 | 19.2 | 5.04 | 18.7 | 4.97 | 18.2 | 4.90 | 18.0 | 4.86 | 17.8 | 4.82 | 16.8 | 4.52 | 15.6 | 4.12 |
| | 2.8 | 2.0 | 20.0 | 5.14 | 19.5 | 5.07 | 19.0 | 5.00 | 18.7 | 4.91 | 18.1 | 4.72 | 16.8 | 4.32 | 15.6 | 3.92 |
| | 6.0 | 5.0 | 21.0 | 5.30 | 20.5 | 5.21 | 19.4 | 4.81 | 18.8 | 4.61 | 18.1 | 4.41 | 16.8 | 4.02 | 15.6 | 3.62 |
| | 7.0 | 6.0 | 21.4 | 5.35 | 20.7 | 5.11 | 19.4 | 4.71 | 18.8 | 4.51 | 18.1 | 4.31 | 16.8 | 3.92 | 15.6 | 3.52 |
| | 8.6 | 7.5 | 21.9 | 5.35 | 20.7 | 4.96 | 19.4 | 4.56 | 18.8 | 4.36 | 18.1 | 4.16 | 16.8 | 3.77 | 15.6 | 3.37 |
| | 11.2 | 10.0 | 21.9 | 5.10 | 20.7 | 4.71 | 19.4 | 4.31 | 18.8 | 4.11 | 18.1 | 3.91 | 16.8 | 3.51 | 15.6 | 3.12 |
| | 16.4 | 15.0 | 21.9 | 4.60 | 20.7 | 4.20 | 19.4 | 3.80 | 18.8 | 3.61 | 18.1 | 3.41 | 16.8 | 3.01 | 15.6 | 2.61 |

# 7. SPW-C1305DXHN8 (Cooling)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 130% | -5.0 | 34.5 | 4.16 | 37.3 | 4.89 | 40.2 | 5.50 | 43.1 | 6.24 | 46.0 | 6.72 | 48.9 | 7.21 | 51.7 | 7.76 |
| | 0.0 | 34.5 | 4.28 | 37.3 | 5.01 | 40.2 | 5.62 | 43.1 | 6.30 | 46.0 | 6.85 | 48.9 | 7.46 | 51.7 | 8.07 |
| | 5.0 | 34.5 | 4.40 | 37.3 | 5.14 | 40.2 | 5.75 | 43.1 | 6.42 | 46.0 | 7.09 | 48.9 | 7.70 | 51.7 | 8.31 |
| | 10.0 | 34.5 | 4.71 | 37.3 | 5.26 | 40.2 | 5.87 | 43.1 | 6.48 | 46.0 | 7.34 | 48.9 | 8.07 | 51.7 | 8.93 |
| | 15.0 | 34.5 | 5.07 | 37.3 | 5.62 | 40.2 | 6.24 | 43.1 | 6.72 | 46.0 | 7.70 | 48.9 | 8.80 | 51.7 | 9.78 |
| | 20.0 | 34.5 | 5.50 | 37.3 | 6.11 | 40.2 | 6.60 | 43.1 | 7.21 | 46.0 | 8.44 | 48.9 | 9.78 | 51.7 | 11.00 |
| | 25.0 | 34.5 | 6.36 | 37.3 | 6.97 | 40.2 | 7.58 | 43.1 | 8.19 | 46.0 | 9.54 | 48.9 | 11.37 | 50.9 | 11.71 |
| | 30.0 | 34.5 | 7.34 | 37.3 | 8.07 | 40.2 | 8.93 | 43.1 | 9.66 | 46.0 | 11.74 | 47.4 | 11.98 | 49.2 | 12.43 |
| | 35.0 | 34.5 | 8.68 | 37.3 | 9.90 | 40.2 | 11.00 | 43.1 | 12.23 | 44.0 | 12.34 | 44.8 | 12.45 | 46.0 | 12.57 |
| | 40.0 | 34.5 | 10.76 | 37.1 | 11.98 | 37.9 | 12.31 | 38.8 | 12.41 | 39.7 | 12.50 | 40.5 | 12.58 | 41.4 | 12.67 |
| | 43.0 | 34.5 | 12.47 | 34.5 | 12.47 | 34.5 | 12.47 | 34.5 | 12.50 | 35.8 | 12.56 | 37.1 | 12.62 | 38.4 | 12.72 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 120% | -5.0 | 33.6 | 4.10 | 36.4 | 4.83 | 39.2 | 5.43 | 42.0 | 6.15 | 44.8 | 6.64 | 47.6 | 7.12 | 50.4 | 7.66 |
| | 0.0 | 33.6 | 4.22 | 36.4 | 4.95 | 39.2 | 5.55 | 42.0 | 6.21 | 44.8 | 6.76 | 47.6 | 7.36 | 50.4 | 7.96 |
| | 5.0 | 33.6 | 4.34 | 36.4 | 5.07 | 39.2 | 5.67 | 42.0 | 6.33 | 44.8 | 7.00 | 47.6 | 7.60 | 50.4 | 8.20 |
| | 10.0 | 33.6 | 4.64 | 36.4 | 5.19 | 39.2 | 5.79 | 42.0 | 6.39 | 44.8 | 7.24 | 47.6 | 7.96 | 50.4 | 8.81 |
| | 15.0 | 33.6 | 5.01 | 36.4 | 5.55 | 39.2 | 6.15 | 42.0 | 6.64 | 44.8 | 7.60 | 47.6 | 8.69 | 50.4 | 9.65 |
| | 20.0 | 33.6 | 5.43 | 36.4 | 6.03 | 39.2 | 6.51 | 42.0 | 7.12 | 44.8 | 8.32 | 47.6 | 9.65 | 50.4 | 10.86 |
| | 25.0 | 33.6 | 6.27 | 36.4 | 6.88 | 39.2 | 7.48 | 42.0 | 8.08 | 44.8 | 9.41 | 47.6 | 11.22 | 49.6 | 11.56 |
| | 30.0 | 33.6 | 7.24 | 36.4 | 7.96 | 39.2 | 8.81 | 42.0 | 9.53 | 44.8 | 11.58 | 46.2 | 11.82 | 47.9 | 12.27 |
| | 35.0 | 33.6 | 8.57 | 36.4 | 9.77 | 39.2 | 10.86 | 42.0 | 12.06 | 42.8 | 12.17 | 43.7 | 12.28 | 44.8 | 12.40 |
| | 40.0 | 33.6 | 10.62 | 36.1 | 11.82 | 37.0 | 12.15 | 37.8 | 12.24 | 38.6 | 12.33 | 39.5 | 12.41 | 40.3 | 12.50 |
| | 43.0 | 33.6 | 12.31 | 33.6 | 12.31 | 33.6 | 12.31 | 33.6 | 12.33 | 34.9 | 12.39 | 36.1 | 12.45 | 37.4 | 12.55 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 110% | -5.0 | 32.9 | 4.01 | 35.6 | 4.72 | 38.4 | 5.31 | 41.1 | 6.02 | 43.8 | 6.49 | 46.6 | 6.97 | 49.3 | 7.50 |
| | 0.0 | 32.9 | 4.13 | 35.6 | 4.84 | 38.4 | 5.43 | 41.1 | 6.08 | 43.8 | 6.61 | 46.6 | 7.20 | 49.3 | 7.79 |
| | 5.0 | 32.9 | 4.25 | 35.6 | 4.96 | 38.4 | 5.55 | 41.1 | 6.20 | 43.8 | 6.85 | 46.6 | 7.44 | 49.3 | 8.03 |
| | 10.0 | 32.9 | 4.55 | 35.6 | 5.08 | 38.4 | 5.67 | 41.1 | 6.26 | 43.8 | 7.09 | 46.6 | 7.79 | 49.3 | 8.62 |
| | 15.0 | 32.9 | 4.90 | 35.6 | 5.43 | 38.4 | 6.02 | 41.1 | 6.49 | 43.8 | 7.44 | 46.6 | 8.50 | 49.3 | 9.45 |
| | 20.0 | 32.9 | 5.31 | 35.6 | 5.90 | 38.4 | 6.38 | 41.1 | 6.97 | 43.8 | 8.15 | 46.6 | 9.45 | 49.3 | 10.63 |
| | 25.0 | 32.9 | 6.14 | 35.6 | 6.73 | 38.4 | 7.32 | 41.1 | 7.91 | 43.8 | 9.21 | 46.6 | 10.98 | 48.5 | 11.31 |
| | 30.0 | 32.9 | 7.09 | 35.6 | 7.79 | 38.4 | 8.62 | 41.1 | 9.33 | 43.8 | 11.34 | 45.2 | 11.57 | 46.9 | 12.01 |
| | 35.0 | 32.9 | 8.38 | 35.6 | 9.57 | 38.4 | 10.63 | 41.1 | 11.81 | 41.9 | 11.92 | 42.8 | 12.02 | 43.8 | 12.14 |
| | 40.0 | 32.9 | 10.39 | 35.4 | 11.57 | 36.2 | 11.89 | 37.0 | 11.99 | 37.8 | 12.07 | 38.7 | 12.15 | 39.5 | 12.23 |
| | 43.0 | 32.9 | 12.04 | 32.9 | 12.04 | 32.9 | 12.04 | 32.9 | 12.07 | 34.1 | 12.13 | 35.4 | 12.19 | 36.6 | 12.28 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 100% | -5.0 | 32.0 | 3.94 | 34.6 | 4.64 | 37.3 | 5.22 | 40.0 | 5.92 | 42.6 | 6.38 | 45.3 | 6.84 | 48.0 | 7.37 |
| | 0.0 | 32.0 | 4.06 | 34.6 | 4.76 | 37.3 | 5.34 | 40.0 | 5.97 | 42.6 | 6.50 | 45.3 | 7.08 | 48.0 | 7.66 |
| | 5.0 | 32.0 | 4.18 | 34.6 | 4.87 | 37.3 | 5.45 | 40.0 | 6.09 | 42.6 | 6.73 | 45.3 | 7.31 | 48.0 | 7.89 |
| | 10.0 | 32.0 | 4.47 | 34.6 | 4.99 | 37.3 | 5.57 | 40.0 | 6.15 | 42.6 | 6.96 | 45.3 | 7.66 | 48.0 | 8.47 |
| | 15.0 | 32.0 | 4.81 | 34.6 | 5.34 | 37.3 | 5.92 | 40.0 | 6.38 | 42.6 | 7.31 | 45.3 | 8.35 | 48.0 | 9.28 |
| | 20.0 | 32.0 | 5.22 | 34.6 | 5.80 | 37.3 | 6.26 | 40.0 | 6.84 | 42.6 | 8.00 | 45.3 | 9.28 | 48.0 | 10.44 |
| | 25.0 | 32.0 | 6.03 | 34.6 | 6.61 | 37.3 | 7.19 | 40.0 | 7.77 | 42.6 | 9.05 | 45.3 | 10.79 | 47.2 | 11.11 |
| | 30.0 | 32.0 | 6.96 | 34.6 | 7.66 | 37.3 | 8.47 | 40.0 | 9.16 | 42.6 | 11.14 | 44.0 | 11.37 | 45.6 | 11.80 |
| | 35.0 | 32.0 | 8.24 | 34.6 | 9.40 | 37.3 | 10.44 | 40.0 | 11.60 | 40.8 | 11.70 | 41.6 | 11.81 | 42.6 | 11.92 |
| | 40.0 | 32.0 | 10.21 | 34.4 | 11.37 | 35.2 | 11.68 | 36.0 | 11.77 | 36.8 | 11.86 | 37.6 | 11.94 | 38.4 | 12.02 |
| | 43.0 | 32.0 | 11.83 | 32.0 | 11.83 | 32.0 | 11.83 | 32.0 | 11.86 | 33.2 | 11.91 | 34.4 | 11.97 | 35.6 | 12.06 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 90% | -5.0 | 28.8 | 3.47 | 31.2 | 4.08 | 33.6 | 4.59 | 36.0 | 5.21 | 38.4 | 5.61 | 40.8 | 6.02 | 43.2 | 6.48 |
| | 0.0 | 28.8 | 3.57 | 31.2 | 4.19 | 33.6 | 4.70 | 36.0 | 5.26 | 38.4 | 5.72 | 40.8 | 6.23 | 43.2 | 6.74 |
| | 5.0 | 28.8 | 3.67 | 31.2 | 4.29 | 33.6 | 4.80 | 36.0 | 5.36 | 38.4 | 5.92 | 40.8 | 6.43 | 43.2 | 6.94 |
| | 10.0 | 28.8 | 3.93 | 31.2 | 4.39 | 33.6 | 4.90 | 36.0 | 5.41 | 38.4 | 6.12 | 40.8 | 6.74 | 43.2 | 7.45 |
| | 15.0 | 28.8 | 4.24 | 31.2 | 4.70 | 33.6 | 5.21 | 36.0 | 5.61 | 38.4 | 6.43 | 40.8 | 7.35 | 43.2 | 8.17 |
| | 20.0 | 28.8 | 4.59 | 31.2 | 5.10 | 33.6 | 5.51 | 36.0 | 6.02 | 38.4 | 7.04 | 40.8 | 8.17 | 43.2 | 9.19 |
| | 25.0 | 28.8 | 5.31 | 31.2 | 5.82 | 33.6 | 6.33 | 36.0 | 6.84 | 38.4 | 7.96 | 40.8 | 9.49 | 42.5 | 9.78 |
| | 30.0 | 28.8 | 6.12 | 31.2 | 6.74 | 33.6 | 7.45 | 36.0 | 8.06 | 38.4 | 9.80 | 39.6 | 10.00 | 41.0 | 10.38 |
| | 35.0 | 28.8 | 7.25 | 31.2 | 8.27 | 33.6 | 9.19 | 36.0 | 10.21 | 36.7 | 10.30 | 37.4 | 10.39 | 38.4 | 10.49 |
| | 40.0 | 28.8 | 8.98 | 31.0 | 10.00 | 31.7 | 10.28 | 32.4 | 10.36 | 33.1 | 10.43 | 33.8 | 10.50 | 34.6 | 10.58 |
| | 43.0 | 28.8 | 10.41 | 28.8 | 10.41 | 28.8 | 10.41 | 28.8 | 10.43 | 29.9 | 10.48 | 31.0 | 10.53 | 32.0 | 10.62 |

# 7. SPW-C1305DXHN8 (Cooling)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 80% | -5.0 | 25.6 | 2.96 | 27.7 | 3.48 | 29.9 | 3.92 | 32.0 | 4.44 | 34.1 | 4.79 | 36.3 | 5.13 | 38.4 | 5.52 |
| | 0.0 | 25.6 | 3.05 | 27.7 | 3.57 | 29.9 | 4.00 | 32.0 | 4.48 | 34.1 | 4.87 | 36.3 | 5.31 | 38.4 | 5.74 |
| | 5.0 | 25.6 | 3.13 | 27.7 | 3.65 | 29.9 | 4.09 | 32.0 | 4.57 | 34.1 | 5.05 | 36.3 | 5.48 | 38.4 | 5.92 |
| | 10.0 | 25.6 | 3.35 | 27.7 | 3.74 | 29.9 | 4.18 | 32.0 | 4.61 | 34.1 | 5.22 | 36.3 | 5.74 | 38.4 | 6.35 |
| | 15.0 | 25.6 | 3.61 | 27.7 | 4.00 | 29.9 | 4.44 | 32.0 | 4.79 | 34.1 | 5.48 | 36.3 | 6.26 | 38.4 | 6.96 |
| | 20.0 | 25.6 | 3.92 | 27.7 | 4.35 | 29.9 | 4.70 | 32.0 | 5.13 | 34.1 | 6.00 | 36.3 | 6.96 | 38.4 | 7.83 |
| | 25.0 | 25.6 | 4.52 | 27.7 | 4.96 | 29.9 | 5.39 | 32.0 | 5.83 | 34.1 | 6.79 | 36.3 | 8.09 | 37.8 | 8.33 |
| | 30.0 | 25.6 | 5.22 | 27.7 | 5.74 | 29.9 | 6.35 | 32.0 | 6.87 | 34.1 | 8.35 | 35.2 | 8.53 | 36.5 | 8.85 |
| | 35.0 | 25.6 | 6.18 | 27.7 | 7.05 | 29.9 | 7.83 | 32.0 | 8.70 | 32.6 | 8.78 | 33.3 | 8.86 | 34.1 | 8.94 |
| | 40.0 | 25.6 | 7.66 | 27.5 | 8.53 | 28.2 | 8.76 | 28.8 | 8.83 | 29.4 | 8.89 | 30.1 | 8.95 | 30.7 | 9.01 |
| | 43.0 | 25.6 | 8.87 | 25.6 | 8.87 | 25.6 | 8.87 | 25.6 | 8.89 | 26.6 | 8.93 | 27.5 | 8.98 | 28.5 | 9.05 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 70% | -5.0 | 22.4 | 2.48 | 24.2 | 2.92 | 26.1 | 3.29 | 28.0 | 3.73 | 29.8 | 4.02 | 31.7 | 4.31 | 33.3 | 4.64 |
| | 0.0 | 22.4 | 2.56 | 24.2 | 3.00 | 26.1 | 3.36 | 28.0 | 3.76 | 29.8 | 4.09 | 31.7 | 4.46 | 33.6 | 4.82 |
| | 5.0 | 22.4 | 2.63 | 24.2 | 3.07 | 26.1 | 3.43 | 28.0 | 3.84 | 29.8 | 4.24 | 31.7 | 4.60 | 33.6 | 4.97 |
| | 10.0 | 22.4 | 2.81 | 24.2 | 3.14 | 26.1 | 3.51 | 28.0 | 3.87 | 29.8 | 4.38 | 31.7 | 4.82 | 33.6 | 5.33 |
| | 15.0 | 22.4 | 3.03 | 24.2 | 3.36 | 26.1 | 3.73 | 28.0 | 4.02 | 29.8 | 4.60 | 31.7 | 5.26 | 33.6 | 5.85 |
| | 20.0 | 22.4 | 3.29 | 24.2 | 3.65 | 26.1 | 3.95 | 28.0 | 4.31 | 29.8 | 5.04 | 31.7 | 5.85 | 33.6 | 6.58 |
| | 25.0 | 22.4 | 3.80 | 24.2 | 4.17 | 26.1 | 4.53 | 28.0 | 4.90 | 29.8 | 5.70 | 31.7 | 6.80 | 33.0 | 7.00 |
| | 30.0 | 22.4 | 4.38 | 24.2 | 4.82 | 26.1 | 5.33 | 28.0 | 5.77 | 29.8 | 7.02 | 30.8 | 7.16 | 31.9 | 7.43 |
| | 35.0 | 22.4 | 5.19 | 24.2 | 5.92 | 26.1 | 6.58 | 28.0 | 7.31 | 28.6 | 7.37 | 29.1 | 7.44 | 29.8 | 7.51 |
| | 40.0 | 22.4 | 6.43 | 24.1 | 7.16 | 24.6 | 7.36 | 25.2 | 7.42 | 25.8 | 7.47 | 26.3 | 7.52 | 26.9 | 7.57 |
| | 43.0 | 22.4 | 7.45 | 22.4 | 7.45 | 22.4 | 7.45 | 22.4 | 7.47 | 23.2 | 7.51 | 24.1 | 7.54 | 24.9 | 7.60 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 60% | -5.0 | 19.2 | 2.01 | 20.8 | 2.37 | 22.4 | 2.66 | 24.0 | 3.02 | 25.6 | 3.25 | 27.2 | 3.49 | 28.8 | 3.76 |
| | 0.0 | 19.2 | 2.07 | 20.8 | 2.43 | 22.4 | 2.72 | 24.0 | 3.05 | 25.6 | 3.31 | 27.2 | 3.61 | 28.8 | 3.90 |
| | 5.0 | 19.2 | 2.13 | 20.8 | 2.48 | 22.4 | 2.78 | 24.0 | 3.11 | 25.6 | 3.43 | 27.2 | 3.73 | 28.8 | 4.02 |
| | 10.0 | 19.2 | 2.28 | 20.8 | 2.54 | 22.4 | 2.84 | 24.0 | 3.14 | 25.6 | 3.55 | 27.2 | 3.90 | 28.8 | 4.32 |
| | 15.0 | 19.2 | 2.46 | 20.8 | 2.72 | 22.4 | 3.02 | 24.0 | 3.25 | 25.6 | 3.73 | 27.2 | 4.26 | 28.8 | 4.73 |
| | 20.0 | 19.2 | 2.66 | 20.8 | 2.96 | 22.4 | 3.19 | 24.0 | 3.49 | 25.6 | 4.08 | 27.2 | 4.73 | 28.8 | 5.32 |
| | 25.0 | 19.2 | 3.08 | 20.8 | 3.37 | 22.4 | 3.67 | 24.0 | 3.96 | 25.6 | 4.61 | 27.2 | 5.50 | 28.3 | 5.67 |
| | 30.0 | 19.2 | 3.55 | 20.8 | 3.90 | 22.4 | 4.32 | 24.0 | 4.67 | 25.6 | 5.68 | 26.4 | 5.80 | 27.4 | 6.02 |
| | 35.0 | 19.2 | 4.20 | 20.8 | 4.79 | 22.4 | 5.32 | 24.0 | 5.92 | 24.5 | 5.97 | 25.0 | 6.02 | 25.6 | 6.08 |
| | 40.0 | 19.2 | 5.21 | 20.6 | 5.80 | 21.1 | 5.96 | 21.6 | 6.00 | 22.1 | 6.05 | 22.6 | 6.09 | 23.0 | 6.13 |
| | 43.0 | 19.2 | 6.03 | 19.2 | 6.03 | 19.2 | 6.03 | 19.2 | 6.05 | 19.9 | 6.08 | 20.6 | 6.11 | 21.4 | 6.15 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 50% | -5.0 | 16.0 | 1.54 | 17.3 | 1.81 | 18.7 | 2.04 | 20.0 | 2.31 | 21.3 | 2.49 | 22.7 | 2.67 | 24.0 | 2.87 |
| | 0.0 | 16.0 | 1.58 | 17.3 | 1.85 | 18.7 | 2.08 | 20.0 | 2.33 | 21.3 | 2.53 | 22.7 | 2.76 | 24.0 | 2.99 |
| | 5.0 | 16.0 | 1.63 | 17.3 | 1.90 | 18.7 | 2.13 | 20.0 | 2.38 | 21.3 | 2.62 | 22.7 | 2.85 | 24.0 | 3.08 |
| | 10.0 | 16.0 | 1.74 | 17.3 | 1.95 | 18.7 | 2.17 | 20.0 | 2.40 | 21.3 | 2.71 | 22.7 | 2.99 | 24.0 | 3.30 |
| | 15.0 | 16.0 | 1.88 | 17.3 | 2.08 | 18.7 | 2.31 | 20.0 | 2.49 | 21.3 | 2.85 | 22.7 | 3.26 | 24.0 | 3.62 |
| | 20.0 | 16.0 | 2.04 | 17.3 | 2.26 | 18.7 | 2.44 | 20.0 | 2.67 | 21.3 | 3.12 | 22.7 | 3.62 | 24.0 | 4.07 |
| | 25.0 | 16.0 | 2.35 | 17.3 | 2.58 | 18.7 | 2.80 | 20.0 | 3.03 | 21.3 | 3.53 | 22.7 | 4.21 | 23.6 | 4.33 |
| | 30.0 | 16.0 | 2.71 | 17.3 | 2.99 | 18.7 | 3.30 | 20.0 | 3.57 | 21.3 | 4.34 | 22.0 | 4.43 | 22.8 | 4.60 |
| | 35.0 | 16.0 | 3.21 | 17.3 | 3.66 | 18.7 | 4.07 | 20.0 | 4.52 | 20.4 | 4.56 | 20.8 | 4.61 | 21.3 | 4.65 |
| | 40.0 | 16.0 | 3.98 | 17.2 | 4.43 | 17.6 | 4.56 | 18.0 | 4.59 | 18.4 | 4.62 | 18.8 | 4.66 | 19.2 | 4.69 |
| | 43.0 | 16.0 | 4.61 | 16.0 | 4.61 | 16.0 | 4.61 | 16.0 | 4.62 | 16.6 | 4.65 | 17.2 | 4.67 | 17.8 | 4.70 |

# 8. SPW-C1305DXHN8 (Heating)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 130% | -19.8 | -20.0 | 31.9 | 11.52 | 30.7 | 11.39 | 29.4 | 11.26 | 28.8 | 11.19 | 28.2 | 11.13 | 26.9 | 11.00 | 25.7 | 10.87 |
| | -14.7 | -15.0 | 37.8 | 12.29 | 36.5 | 12.16 | 35.2 | 12.04 | 34.6 | 11.97 | 34.0 | 11.91 | 32.7 | 11.78 | 31.5 | 11.65 |
| | -9.6 | -10.0 | 43.6 | 13.07 | 42.3 | 12.94 | 41.1 | 12.81 | 40.5 | 12.75 | 39.8 | 12.68 | 38.6 | 12.56 | 37.3 | 12.43 |
| | -4.4 | -5.0 | 49.5 | 13.85 | 48.2 | 13.72 | 47.0 | 13.59 | 46.3 | 13.53 | 45.7 | 13.46 | 43.6 | 13.27 | 40.3 | 12.66 |
| | -1.8 | -2.5 | 52.4 | 14.24 | 51.2 | 14.11 | 49.9 | 13.96 | 48.5 | 13.66 | 46.9 | 13.35 | 43.6 | 12.75 | 40.3 | 12.14 |
| | 0.8 | 0.0 | 55.4 | 14.62 | 53.5 | 14.05 | 50.2 | 13.44 | 48.5 | 13.14 | 46.9 | 12.83 | 43.6 | 12.23 | 40.3 | 11.62 |
| | 2.8 | 2.0 | 56.8 | 14.24 | 53.5 | 13.63 | 50.2 | 13.03 | 48.5 | 12.72 | 46.9 | 12.42 | 43.6 | 11.81 | 40.3 | 11.20 |
| | 6.0 | 5.0 | 56.8 | 13.62 | 53.5 | 13.01 | 50.2 | 12.40 | 48.5 | 12.10 | 46.9 | 11.79 | 43.6 | 11.19 | 40.3 | 10.58 |
| | 7.0 | 6.0 | 56.8 | 13.41 | 53.5 | 12.80 | 50.2 | 12.19 | 48.5 | 11.68 | 46.9 | 11.59 | 43.6 | 10.98 | 40.3 | 10.37 |
| | 8.6 | 7.5 | 56.8 | 13.10 | 53.5 | 12.49 | 50.2 | 11.88 | 48.5 | 11.58 | 46.9 | 11.27 | 43.6 | 10.67 | 40.3 | 10.06 |
| | 11.2 | 10.0 | 56.8 | 12.58 | 53.5 | 11.97 | 50.2 | 11.36 | 48.5 | 11.06 | 46.9 | 10.75 | 43.6 | 10.15 | 40.3 | 9.54 |
| | 16.4 | 15.0 | 56.8 | 11.54 | 53.5 | 10.93 | 50.2 | 10.32 | 48.5 | 10.02 | 46.9 | 9.71 | 43.6 | 9.11 | 40.3 | 8.50 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 120% | -19.8 | -20.0 | 31.1 | 11.46 | 29.9 | 11.33 | 28.7 | 11.20 | 28.1 | 11.14 | 27.5 | 11.08 | 26.2 | 10.95 | 25.0 | 10.82 |
| | -14.7 | -15.0 | 36.8 | 12.23 | 35.6 | 12.10 | 34.3 | 11.98 | 33.7 | 11.91 | 33.1 | 11.85 | 31.9 | 11.72 | 30.7 | 11.59 |
| | -9.6 | -10.0 | 42.5 | 13.01 | 41.2 | 12.88 | 40.0 | 12.75 | 39.4 | 12.69 | 38.8 | 12.62 | 37.6 | 12.49 | 36.4 | 12.37 |
| | -4.4 | -5.0 | 48.2 | 13.78 | 47.0 | 13.65 | 45.7 | 13.52 | 45.1 | 13.46 | 44.5 | 13.39 | 42.4 | 13.20 | 39.2 | 12.60 |
| | -1.8 | -2.5 | 51.1 | 14.17 | 49.8 | 14.04 | 48.6 | 13.89 | 47.3 | 13.59 | 45.6 | 13.29 | 42.4 | 12.68 | 39.2 | 12.08 |
| | 0.8 | 0.0 | 53.9 | 14.55 | 52.1 | 13.98 | 48.9 | 13.38 | 47.3 | 13.07 | 45.6 | 12.77 | 42.4 | 12.17 | 39.2 | 11.56 |
| | 2.8 | 2.0 | 55.3 | 14.17 | 52.1 | 13.57 | 48.9 | 12.96 | 47.3 | 12.66 | 45.6 | 12.36 | 42.4 | 11.75 | 39.2 | 11.15 |
| | 6.0 | 5.0 | 55.3 | 13.55 | 52.1 | 12.94 | 48.9 | 12.34 | 47.3 | 12.04 | 45.6 | 11.74 | 42.4 | 11.13 | 39.2 | 10.53 |
| | 7.0 | 6.0 | 55.3 | 13.34 | 52.1 | 12.74 | 48.9 | 12.13 | 47.3 | 11.63 | 45.6 | 11.53 | 42.4 | 10.92 | 39.2 | 10.32 |
| | 8.6 | 7.5 | 55.3 | 13.03 | 52.1 | 12.43 | 48.9 | 11.82 | 47.3 | 11.52 | 45.6 | 11.22 | 42.4 | 10.61 | 39.2 | 10.01 |
| | 11.2 | 10.0 | 55.3 | 12.51 | 52.1 | 11.91 | 48.9 | 11.31 | 47.3 | 11.00 | 45.6 | 10.70 | 42.4 | 10.10 | 39.2 | 9.49 |
| | 16.4 | 15.0 | 55.3 | 11.48 | 52.1 | 10.88 | 48.9 | 10.27 | 47.3 | 9.97 | 45.6 | 9.67 | 42.4 | 9.06 | 39.2 | 8.46 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 110% | -19.8 | -20.0 | 30.5 | 11.40 | 29.3 | 11.28 | 28.1 | 11.15 | 27.5 | 11.08 | 26.9 | 11.02 | 25.7 | 10.89 | 24.5 | 10.77 |
| | -14.7 | -15.0 | 36.0 | 12.17 | 34.8 | 12.04 | 33.6 | 11.92 | 33.0 | 11.85 | 32.4 | 11.79 | 31.2 | 11.66 | 30.0 | 11.54 |
| | -9.6 | -10.0 | 41.6 | 12.94 | 40.4 | 12.81 | 39.2 | 12.69 | 38.6 | 12.62 | 38.0 | 12.56 | 36.8 | 12.43 | 35.6 | 12.30 |
| | -4.4 | -5.0 | 47.2 | 13.71 | 46.0 | 13.58 | 44.8 | 13.46 | 44.2 | 13.39 | 43.6 | 13.33 | 41.5 | 13.14 | 38.4 | 12.53 |
| | -1.8 | -2.5 | 50.0 | 14.10 | 48.8 | 13.97 | 47.6 | 13.82 | 46.3 | 13.52 | 44.7 | 13.22 | 41.5 | 12.62 | 38.4 | 12.02 |
| | 0.8 | 0.0 | 52.8 | 14.48 | 51.0 | 13.91 | 47.8 | 13.31 | 46.3 | 13.01 | 44.7 | 12.71 | 41.5 | 12.11 | 38.4 | 11.50 |
| | 2.8 | 2.0 | 54.1 | 14.10 | 51.0 | 13.50 | 47.8 | 12.90 | 46.3 | 12.60 | 44.7 | 12.30 | 41.5 | 11.69 | 38.4 | 11.09 |
| | 6.0 | 5.0 | 54.1 | 13.48 | 51.0 | 12.88 | 47.8 | 12.28 | 46.3 | 11.98 | 44.7 | 11.68 | 41.5 | 11.08 | 38.4 | 10.47 |
| | 7.0 | 6.0 | 54.1 | 13.28 | 51.0 | 12.67 | 47.8 | 12.07 | 46.3 | 11.57 | 44.7 | 11.47 | 41.5 | 10.87 | 38.4 | 10.27 |
| | 8.6 | 7.5 | 54.1 | 12.97 | 51.0 | 12.37 | 47.8 | 11.76 | 46.3 | 11.46 | 44.7 | 11.16 | 41.5 | 10.56 | 38.4 | 9.96 |
| | 11.2 | 10.0 | 54.1 | 12.45 | 51.0 | 11.85 | 47.8 | 11.25 | 46.3 | 10.95 | 44.7 | 10.65 | 41.5 | 10.05 | 38.4 | 9.44 |
| | 16.4 | 15.0 | 54.1 | 11.42 | 51.0 | 10.82 | 47.8 | 10.22 | 46.3 | 9.92 | 44.7 | 9.62 | 41.5 | 9.02 | 38.4 | 8.42 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 100% | -19.8 | -20.0 | 29.6 | 11.33 | 28.5 | 11.21 | 27.3 | 11.08 | 26.7 | 11.02 | 26.1 | 10.95 | 25.0 | 10.83 | 23.8 | 10.70 |
| | -14.7 | -15.0 | 35.0 | 12.10 | 33.9 | 11.97 | 32.7 | 11.85 | 32.1 | 11.78 | 31.5 | 11.72 | 30.4 | 11.59 | 29.2 | 11.47 |
| | -9.6 | -10.0 | 40.4 | 12.86 | 39.3 | 12.74 | 38.1 | 12.61 | 37.5 | 12.55 | 37.0 | 12.48 | 35.8 | 12.36 | 34.6 | 12.23 |
| | -4.4 | -5.0 | 45.9 | 13.63 | 44.7 | 13.50 | 43.6 | 13.38 | 43.0 | 13.31 | 42.4 | 13.25 | 40.4 | 13.06 | 37.4 | 12.46 |
| | -1.8 | -2.5 | 48.6 | 14.01 | 47.5 | 13.88 | 46.3 | 13.74 | 45.0 | 13.44 | 43.5 | 13.14 | 40.4 | 12.55 | 37.4 | 11.95 |
| | 0.8 | 0.0 | 51.4 | 14.39 | 49.6 | 13.83 | 46.5 | 13.23 | 45.0 | 12.93 | 43.5 | 12.63 | 40.4 | 12.03 | 37.4 | 11.44 |
| | 2.8 | 2.0 | 52.7 | 14.02 | 49.6 | 13.42 | 46.5 | 12.82 | 45.0 | 12.52 | 43.5 | 12.22 | 40.4 | 11.62 | 37.4 | 11.03 |
| | 6.0 | 5.0 | 52.7 | 13.40 | 49.6 | 12.80 | 46.5 | 12.21 | 45.0 | 11.91 | 43.5 | 11.61 | 40.4 | 11.01 | 37.4 | 10.41 |
| | 7.0 | 6.0 | 52.7 | 13.20 | 49.6 | 12.60 | 46.5 | 12.00 | 45.0 | 11.50 | 43.5 | 11.40 | 40.4 | 10.81 | 37.4 | 10.21 |
| | 8.6 | 7.5 | 52.7 | 12.89 | 49.6 | 12.29 | 46.5 | 11.69 | 45.0 | 11.40 | 43.5 | 11.10 | 40.4 | 10.50 | 37.4 | 9.90 |
| | 11.2 | 10.0 | 52.7 | 12.38 | 49.6 | 11.78 | 46.5 | 11.18 | 45.0 | 10.88 | 43.5 | 10.58 | 40.4 | 9.99 | 37.4 | 9.39 |
| | 16.4 | 15.0 | 52.7 | 11.36 | 49.6 | 10.76 | 46.5 | 10.16 | 45.0 | 9.86 | 43.5 | 9.56 | 40.4 | 8.96 | 37.4 | 8.37 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 90% | -19.8 | -20.0 | 26.7 | 10.09 | 25.6 | 9.98 | 24.6 | 9.86 | 24.1 | 9.81 | 23.5 | 9.75 | 22.5 | 9.64 | 21.4 | 9.52 |
| | -14.7 | -15.0 | 31.5 | 10.77 | 30.5 | 10.66 | 29.4 | 10.54 | 28.9 | 10.49 | 28.4 | 10.43 | 27.3 | 10.32 | 26.3 | 10.21 |
| | -9.6 | -10.0 | 36.4 | 11.45 | 35.4 | 11.34 | 34.3 | 11.22 | 33.8 | 11.17 | 33.3 | 11.11 | 32.2 | 11.00 | 31.2 | 10.89 |
| | -4.4 | -5.0 | 41.3 | 12.13 | 40.3 | 12.02 | 39.2 | 11.90 | 38.7 | 11.85 | 38.2 | 11.79 | 36.4 | 11.62 | 33.6 | 11.09 |
| | -1.8 | -2.5 | 43.8 | 12.47 | 42.7 | 12.36 | 41.7 | 12.23 | 40.5 | 11.96 | 39.1 | 11.70 | 36.4 | 11.17 | 33.6 | 10.63 |
| | 0.8 | 0.0 | 46.2 | 12.81 | 44.6 | 12.31 | 41.9 | 11.77 | 40.5 | 11.51 | 39.1 | 11.24 | 36.4 | 10.71 | 33.6 | 10.18 |
| | 2.8 | 2.0 | 47.4 | 12.47 | 44.6 | 11.94 | 41.9 | 11.41 | 40.5 | 11.14 | 39.1 | 10.88 | 36.4 | 10.35 | 33.6 | 9.81 |
| | 6.0 | 5.0 | 47.4 | 11.93 | 44.6 | 11.40 | 41.9 | 10.86 | 40.5 | 10.60 | 39.1 | 10.33 | 36.4 | 9.80 | 33.6 | 9.27 |
| | 7.0 | 6.0 | 47.4 | 11.75 | 44.6 | 11.21 | 41.9 | 10.68 | 40.5 | 10.24 | 39.1 | 10.15 | 36.4 | 9.62 | 33.6 | 9.08 |
| | 8.6 | 7.5 | 47.4 | 11.47 | 44.6 | 10.94 | 41.9 | 10.41 | 40.5 | 10.14 | 39.1 | 9.88 | 36.4 | 9.34 | 33.6 | 8.81 |
| | 11.2 | 10.0 | 47.4 | 11.02 | 44.6 | 10.48 | 41.9 | 9.95 | 40.5 | 9.69 | 39.1 | 9.42 | 36.4 | 8.89 | 33.6 | 8.36 |
| | 16.4 | 15.0 | 47.4 | 10.11 | 44.6 | 9.57 | 41.9 | 9.04 | 40.5 | 8.78 | 39.1 | 8.51 | 36.4 | 7.98 | 33.6 | 7.44 |

# 8. SPW-C1305DXHN8 (Heating)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 80% | -19.8 | -20.0 | 23.7 | 8.95 | 22.8 | 8.85 | 21.8 | 8.75 | 21.4 | 8.70 | 20.9 | 8.65 | 20.0 | 8.55 | 19.1 | 8.45 |
| | -14.7 | -15.0 | 28.0 | 9.56 | 27.1 | 9.46 | 26.2 | 9.36 | 25.7 | 9.31 | 25.2 | 9.26 | 24.3 | 9.16 | 23.4 | 9.06 |
| | -9.6 | -10.0 | 32.4 | 10.16 | 31.4 | 10.06 | 30.5 | 9.96 | 30.0 | 9.91 | 29.6 | 9.86 | 28.6 | 9.76 | 27.7 | 9.66 |
| | -4.4 | -5.0 | 36.7 | 10.77 | 35.8 | 10.67 | 34.9 | 10.57 | 34.4 | 10.52 | 33.9 | 10.47 | 32.3 | 10.32 | 29.9 | 9.84 |
| | -1.8 | -2.5 | 38.9 | 11.07 | 38.0 | 10.97 | 37.0 | 10.86 | 36.0 | 10.62 | 34.8 | 10.38 | 32.3 | 9.91 | 29.9 | 9.44 |
| | 0.8 | 0.0 | 41.1 | 11.37 | 39.7 | 10.92 | 37.2 | 10.45 | 36.0 | 10.22 | 34.8 | 9.98 | 32.3 | 9.51 | 29.9 | 9.03 |
| | 2.8 | 2.0 | 42.1 | 11.07 | 39.7 | 10.60 | 37.2 | 10.13 | 36.0 | 9.89 | 34.8 | 9.66 | 32.3 | 9.18 | 29.9 | 8.71 |
| | 6.0 | 5.0 | 42.1 | 10.59 | 39.7 | 10.12 | 37.2 | 9.64 | 36.0 | 9.41 | 34.8 | 9.17 | 32.3 | 8.70 | 29.9 | 8.23 |
| | 7.0 | 6.0 | 42.1 | 10.43 | 39.7 | 9.95 | 37.2 | 9.48 | 36.0 | 9.09 | 34.8 | 9.01 | 32.3 | 8.54 | 29.9 | 8.06 |
| | 8.6 | 7.5 | 42.1 | 10.18 | 39.7 | 9.71 | 37.2 | 9.24 | 36.0 | 9.00 | 34.8 | 8.77 | 32.3 | 8.29 | 29.9 | 7.82 |
| | 11.2 | 10.0 | 42.1 | 9.78 | 39.7 | 9.31 | 37.2 | 8.83 | 36.0 | 8.60 | 34.8 | 8.36 | 32.3 | 7.89 | 29.9 | 7.42 |
| | 16.4 | 15.0 | 42.1 | 8.97 | 39.7 | 8.50 | 37.2 | 8.03 | 36.0 | 7.79 | 34.8 | 7.55 | 32.3 | 7.08 | 29.9 | 6.61 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 70% | -19.8 | -20.0 | 20.7 | 7.71 | 19.9 | 7.62 | 19.1 | 7.54 | 18.7 | 7.49 | 18.3 | 7.45 | 17.5 | 7.36 | 16.7 | 7.28 |
| | -14.7 | -15.0 | 24.5 | 8.23 | 23.7 | 8.14 | 22.9 | 8.06 | 22.5 | 8.01 | 22.1 | 7.97 | 21.3 | 7.88 | 20.5 | 7.80 |
| | -9.6 | -10.0 | 28.3 | 8.75 | 27.5 | 8.66 | 26.7 | 8.58 | 26.3 | 8.53 | 25.9 | 8.49 | 25.1 | 8.40 | 24.2 | 8.32 |
| | -4.4 | -5.0 | 32.1 | 9.27 | 31.3 | 9.18 | 30.5 | 9.10 | 30.1 | 9.05 | 29.7 | 9.01 | 28.3 | 8.88 | 26.1 | 8.47 |
| | -1.8 | -2.5 | 34.0 | 9.53 | 33.2 | 9.44 | 32.4 | 9.34 | 31.5 | 9.14 | 30.4 | 8.94 | 28.3 | 8.53 | 26.1 | 8.12 |
| | 0.8 | 0.0 | 36.0 | 9.79 | 34.7 | 9.40 | 32.6 | 9.00 | 31.5 | 8.79 | 30.4 | 8.59 | 28.3 | 8.18 | 26.1 | 7.78 |
| | 2.8 | 2.0 | 36.9 | 9.53 | 34.7 | 9.12 | 32.6 | 8.72 | 31.5 | 8.51 | 30.4 | 8.31 | 28.3 | 7.90 | 26.1 | 7.50 |
| | 6.0 | 5.0 | 36.9 | 9.11 | 34.7 | 8.71 | 32.6 | 8.30 | 31.5 | 8.10 | 30.4 | 7.89 | 28.3 | 7.49 | 26.1 | 7.08 |
| | 7.0 | 6.0 | 36.9 | 8.97 | 34.7 | 8.57 | 32.6 | 8.16 | 31.5 | 7.82 | 30.4 | 7.75 | 28.3 | 7.35 | 26.1 | 6.94 |
| | 8.6 | 7.5 | 36.9 | 8.77 | 34.7 | 8.36 | 32.6 | 7.95 | 31.5 | 7.75 | 30.4 | 7.55 | 28.3 | 7.14 | 26.1 | 6.73 |
| | 11.2 | 10.0 | 36.9 | 8.42 | 34.7 | 8.01 | 32.6 | 7.60 | 31.5 | 7.40 | 30.4 | 7.20 | 28.3 | 6.79 | 26.1 | 6.38 |
| | 16.4 | 15.0 | 36.9 | 7.72 | 34.7 | 7.31 | 32.6 | 6.91 | 31.5 | 6.70 | 30.4 | 6.50 | 28.3 | 6.09 | 26.1 | 5.69 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 60% | -19.8 | -20.0 | 17.8 | 6.57 | 17.1 | 6.50 | 16.4 | 6.43 | 16.0 | 6.39 | 15.7 | 6.35 | 15.0 | 6.28 | 14.3 | 6.21 |
| | -14.7 | -15.0 | 21.0 | 7.02 | 20.3 | 6.94 | 19.6 | 6.87 | 19.3 | 6.83 | 18.9 | 6.80 | 18.2 | 6.72 | 17.5 | 6.65 |
| | -9.6 | -10.0 | 24.3 | 7.46 | 23.6 | 7.39 | 22.9 | 7.31 | 22.5 | 7.28 | 22.2 | 7.24 | 21.5 | 7.17 | 20.8 | 7.09 |
| | -4.4 | -5.0 | 27.5 | 7.90 | 26.8 | 7.83 | 26.1 | 7.76 | 25.8 | 7.72 | 25.4 | 7.68 | 24.2 | 7.57 | 22.4 | 7.23 |
| | -1.8 | -2.5 | 29.2 | 8.13 | 28.5 | 8.05 | 27.8 | 7.97 | 27.0 | 7.80 | 26.1 | 7.62 | 24.2 | 7.28 | 22.4 | 6.93 |
| | 0.8 | 0.0 | 30.8 | 8.35 | 29.8 | 8.02 | 27.9 | 7.67 | 27.0 | 7.50 | 26.1 | 7.33 | 24.2 | 6.98 | 22.4 | 6.63 |
| | 2.8 | 2.0 | 31.6 | 8.13 | 29.8 | 7.78 | 27.9 | 7.44 | 27.0 | 7.26 | 26.1 | 7.09 | 24.2 | 6.74 | 22.4 | 6.40 |
| | 6.0 | 5.0 | 31.6 | 7.77 | 29.8 | 7.43 | 27.9 | 7.08 | 27.0 | 6.91 | 26.1 | 6.73 | 24.2 | 6.39 | 22.4 | 6.04 |
| | 7.0 | 6.0 | 31.6 | 7.65 | 29.8 | 7.31 | 27.9 | 6.96 | 27.0 | 6.67 | 26.1 | 6.61 | 24.2 | 6.27 | 22.4 | 5.92 |
| | 8.6 | 7.5 | 31.6 | 7.48 | 29.8 | 7.13 | 27.9 | 6.78 | 27.0 | 6.61 | 26.1 | 6.44 | 24.2 | 6.09 | 22.4 | 5.74 |
| | 11.2 | 10.0 | 31.6 | 7.18 | 29.8 | 6.83 | 27.9 | 6.49 | 27.0 | 6.31 | 26.1 | 6.14 | 24.2 | 5.79 | 22.4 | 5.45 |
| | 16.4 | 15.0 | 31.6 | 6.59 | 29.8 | 6.24 | 27.9 | 5.89 | 27.0 | 5.72 | 26.1 | 5.55 | 24.2 | 5.20 | 22.4 | 4.85 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 50% | -19.8 | -20.0 | 14.8 | 5.33 | 14.2 | 5.27 | 13.7 | 5.21 | 13.4 | 5.18 | 13.1 | 5.15 | 12.5 | 5.09 | 11.9 | 5.03 |
| | -14.7 | -15.0 | 17.5 | 5.69 | 16.9 | 5.63 | 16.3 | 5.57 | 16.1 | 5.54 | 15.8 | 5.51 | 15.2 | 5.45 | 14.6 | 5.39 |
| | -9.6 | -10.0 | 20.2 | 6.05 | 19.6 | 5.99 | 19.1 | 5.93 | 18.8 | 5.90 | 18.5 | 5.87 | 17.9 | 5.81 | 17.3 | 5.75 |
| | -4.4 | -5.0 | 22.9 | 6.41 | 22.4 | 6.35 | 21.8 | 6.29 | 21.5 | 6.26 | 21.2 | 6.23 | 20.2 | 6.14 | 18.7 | 5.86 |
| | -1.8 | -2.5 | 24.3 | 6.59 | 23.7 | 6.53 | 23.1 | 6.46 | 22.5 | 6.32 | 21.7 | 6.18 | 20.2 | 5.90 | 18.7 | 5.62 |
| | 0.8 | 0.0 | 25.7 | 6.76 | 24.8 | 6.50 | 23.3 | 6.22 | 22.5 | 6.08 | 21.7 | 5.94 | 20.2 | 5.66 | 18.7 | 5.37 |
| | 2.8 | 2.0 | 26.3 | 6.59 | 24.8 | 6.31 | 23.3 | 6.03 | 22.5 | 5.88 | 21.7 | 5.74 | 20.2 | 5.46 | 18.7 | 5.18 |
| | 6.0 | 5.0 | 26.3 | 6.30 | 24.8 | 6.02 | 23.3 | 5.74 | 22.5 | 5.60 | 21.7 | 5.46 | 20.2 | 5.17 | 18.7 | 4.89 |
| | 7.0 | 6.0 | 26.3 | 6.20 | 24.8 | 5.92 | 23.3 | 5.64 | 22.5 | 5.41 | 21.7 | 5.36 | 20.2 | 5.08 | 18.7 | 4.80 |
| | 8.6 | 7.5 | 26.3 | 6.06 | 24.8 | 5.78 | 23.3 | 5.50 | 22.5 | 5.36 | 21.7 | 5.22 | 20.2 | 4.93 | 18.7 | 4.65 |
| | 11.2 | 10.0 | 26.3 | 5.82 | 24.8 | 5.54 | 23.3 | 5.26 | 22.5 | 5.12 | 21.7 | 4.97 | 20.2 | 4.69 | 18.7 | 4.41 |
| | 16.4 | 15.0 | 26.3 | 5.34 | 24.8 | 5.06 | 23.3 | 4.77 | 22.5 | 4.63 | 21.7 | 4.49 | 20.2 | 4.21 | 18.7 | 3.93 |

# 9. SPW-C1405DXHN8 (Cooling)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 130% | -5.0 | 38.8 | 4.77 | 42.0 | 5.61 | 45.3 | 6.31 | 48.5 | 7.15 | 51.7 | 7.71 | 55.0 | 8.27 | 58.2 | 8.90 |
| | 0.0 | 38.8 | 4.91 | 42.0 | 5.75 | 45.3 | 6.45 | 48.5 | 7.22 | 51.7 | 7.85 | 55.0 | 8.55 | 58.2 | 9.25 |
| | 5.0 | 38.8 | 5.05 | 42.0 | 5.89 | 45.3 | 6.59 | 48.5 | 7.36 | 51.7 | 8.13 | 55.0 | 8.83 | 58.2 | 9.53 |
| | 10.0 | 38.8 | 5.40 | 42.0 | 6.03 | 45.3 | 6.73 | 48.5 | 7.43 | 51.7 | 8.41 | 55.0 | 9.25 | 58.2 | 10.23 |
| | 15.0 | 38.8 | 5.82 | 42.0 | 6.45 | 45.3 | 7.15 | 48.5 | 7.71 | 51.7 | 8.83 | 55.0 | 10.09 | 58.2 | 11.21 |
| | 20.0 | 38.8 | 6.31 | 42.0 | 7.01 | 45.3 | 7.57 | 48.5 | 8.27 | 51.7 | 9.67 | 55.0 | 11.21 | 58.2 | 12.62 |
| | 25.0 | 38.8 | 7.29 | 42.0 | 7.99 | 45.3 | 8.69 | 48.5 | 9.39 | 51.7 | 10.93 | 55.0 | 13.04 | 57.2 | 13.43 |
| | 30.0 | 38.8 | 8.41 | 42.0 | 9.25 | 45.3 | 10.23 | 48.5 | 11.07 | 51.7 | 13.46 | 53.4 | 13.74 | 55.3 | 14.26 |
| | 35.0 | 38.8 | 9.95 | 42.0 | 11.35 | 45.3 | 12.62 | 48.5 | 14.02 | 49.5 | 14.14 | 50.5 | 14.27 | 51.7 | 14.41 |
| | 40.0 | 38.8 | 12.34 | 41.7 | 13.74 | 42.7 | 14.12 | 43.7 | 14.23 | 44.6 | 14.33 | 45.6 | 14.42 | 46.6 | 14.52 |
| | 43.0 | 38.8 | 14.30 | 38.8 | 14.30 | 38.8 | 14.30 | 38.8 | 14.33 | 40.3 | 14.40 | 41.7 | 14.47 | 43.2 | 14.58 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 120% | -5.0 | 37.8 | 4.70 | 40.9 | 5.53 | 44.1 | 6.22 | 47.3 | 7.05 | 50.4 | 7.61 | 53.5 | 8.16 | 56.7 | 8.78 |
| | 0.0 | 37.8 | 4.84 | 40.9 | 5.67 | 44.1 | 6.36 | 47.3 | 7.12 | 50.4 | 7.75 | 53.5 | 8.44 | 56.7 | 9.13 |
| | 5.0 | 37.8 | 4.98 | 40.9 | 5.81 | 44.1 | 6.50 | 47.3 | 7.26 | 50.4 | 8.02 | 53.5 | 8.71 | 56.7 | 9.41 |
| | 10.0 | 37.8 | 5.33 | 40.9 | 5.95 | 44.1 | 6.64 | 47.3 | 7.33 | 50.4 | 8.30 | 53.5 | 9.13 | 56.7 | 10.10 |
| | 15.0 | 37.8 | 5.74 | 40.9 | 6.36 | 44.1 | 7.05 | 47.3 | 7.61 | 50.4 | 8.71 | 53.5 | 9.96 | 56.7 | 11.07 |
| | 20.0 | 37.8 | 6.22 | 40.9 | 6.92 | 44.1 | 7.47 | 47.3 | 8.16 | 50.4 | 9.54 | 53.5 | 11.07 | 56.7 | 12.45 |
| | 25.0 | 37.8 | 7.19 | 40.9 | 7.88 | 44.1 | 8.58 | 47.3 | 9.27 | 50.4 | 10.79 | 53.5 | 12.86 | 55.8 | 13.25 |
| | 30.0 | 37.8 | 8.30 | 40.9 | 9.13 | 44.1 | 10.10 | 47.3 | 10.93 | 50.4 | 13.28 | 52.0 | 13.56 | 53.9 | 14.07 |
| | 35.0 | 37.8 | 9.82 | 40.9 | 11.20 | 44.1 | 12.45 | 47.3 | 13.83 | 48.2 | 13.96 | 49.1 | 14.08 | 50.4 | 14.22 |
| | 40.0 | 37.8 | 12.17 | 40.6 | 13.56 | 41.6 | 13.93 | 42.5 | 14.04 | 43.5 | 14.14 | 44.4 | 14.23 | 45.4 | 14.33 |
| | 43.0 | 37.8 | 14.11 | 37.8 | 14.11 | 37.8 | 14.11 | 37.8 | 14.14 | 39.2 | 14.21 | 40.6 | 14.27 | 42.1 | 14.39 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 110% | -5.0 | 37.0 | 4.60 | 40.1 | 5.42 | 43.2 | 6.09 | 46.3 | 6.91 | 49.3 | 7.45 | 52.4 | 7.99 | 55.5 | 8.60 |
| | 0.0 | 37.0 | 4.74 | 40.1 | 5.55 | 43.2 | 6.23 | 46.3 | 6.97 | 49.3 | 7.58 | 52.4 | 8.26 | 55.5 | 8.94 |
| | 5.0 | 37.0 | 4.87 | 40.1 | 5.69 | 43.2 | 6.36 | 46.3 | 7.11 | 49.3 | 7.85 | 52.4 | 8.53 | 55.5 | 9.21 |
| | 10.0 | 37.0 | 5.21 | 40.1 | 5.82 | 43.2 | 6.50 | 46.3 | 7.18 | 49.3 | 8.12 | 52.4 | 8.94 | 55.5 | 9.88 |
| | 15.0 | 37.0 | 5.62 | 40.1 | 6.23 | 43.2 | 6.91 | 46.3 | 7.45 | 49.3 | 8.53 | 52.4 | 9.75 | 55.5 | 10.83 |
| | 20.0 | 37.0 | 6.09 | 40.1 | 6.77 | 43.2 | 7.31 | 46.3 | 7.99 | 49.3 | 9.34 | 52.4 | 10.83 | 55.5 | 12.19 |
| | 25.0 | 37.0 | 7.04 | 40.1 | 7.72 | 43.2 | 8.39 | 46.3 | 9.07 | 49.3 | 10.56 | 52.4 | 12.59 | 54.6 | 12.97 |
| | 30.0 | 37.0 | 8.12 | 40.1 | 8.94 | 43.2 | 9.88 | 46.3 | 10.70 | 49.3 | 13.00 | 50.9 | 13.27 | 52.7 | 13.77 |
| | 35.0 | 37.0 | 9.61 | 40.1 | 10.97 | 43.2 | 12.19 | 46.3 | 13.54 | 47.2 | 13.66 | 48.1 | 13.78 | 49.3 | 13.92 |
| | 40.0 | 37.0 | 11.91 | 39.8 | 13.27 | 40.7 | 13.63 | 41.6 | 13.74 | 42.6 | 13.84 | 43.5 | 13.93 | 44.4 | 14.03 |
| | 43.0 | 37.0 | 13.81 | 37.0 | 13.81 | 37.0 | 13.81 | 37.0 | 13.84 | 38.4 | 13.90 | 39.8 | 13.97 | 41.2 | 14.08 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 100% | -5.0 | 36.0 | 4.52 | 39.0 | 5.32 | 42.0 | 5.99 | 45.0 | 6.78 | 48.0 | 7.32 | 51.0 | 7.85 | 54.0 | 8.45 |
| | 0.0 | 36.0 | 4.66 | 39.0 | 5.45 | 42.0 | 6.12 | 45.0 | 6.85 | 48.0 | 7.45 | 51.0 | 8.11 | 54.0 | 8.78 |
| | 5.0 | 36.0 | 4.79 | 39.0 | 5.59 | 42.0 | 6.25 | 45.0 | 6.98 | 48.0 | 7.71 | 51.0 | 8.38 | 54.0 | 9.04 |
| | 10.0 | 36.0 | 5.12 | 39.0 | 5.72 | 42.0 | 6.38 | 45.0 | 7.05 | 48.0 | 7.98 | 51.0 | 8.78 | 54.0 | 9.71 |
| | 15.0 | 36.0 | 5.52 | 39.0 | 6.12 | 42.0 | 6.78 | 45.0 | 7.32 | 48.0 | 8.38 | 51.0 | 9.58 | 54.0 | 10.64 |
| | 20.0 | 36.0 | 5.99 | 39.0 | 6.65 | 42.0 | 7.18 | 45.0 | 7.85 | 48.0 | 9.18 | 51.0 | 10.64 | 54.0 | 11.97 |
| | 25.0 | 36.0 | 6.92 | 39.0 | 7.58 | 42.0 | 8.25 | 45.0 | 8.91 | 48.0 | 10.37 | 51.0 | 12.37 | 53.1 | 12.74 |
| | 30.0 | 36.0 | 7.98 | 39.0 | 8.78 | 42.0 | 9.71 | 45.0 | 10.51 | 48.0 | 12.77 | 49.5 | 13.03 | 51.3 | 13.53 |
| | 35.0 | 36.0 | 9.44 | 39.0 | 10.77 | 42.0 | 11.97 | 45.0 | 13.30 | 45.9 | 13.42 | 46.8 | 13.54 | 48.0 | 13.67 |
| | 40.0 | 36.0 | 11.70 | 38.7 | 13.03 | 39.6 | 13.39 | 40.5 | 13.50 | 41.4 | 13.59 | 42.3 | 13.69 | 43.2 | 13.78 |
| | 43.0 | 36.0 | 13.57 | 36.0 | 13.57 | 36.0 | 13.57 | 36.0 | 13.59 | 37.4 | 13.66 | 38.7 | 13.73 | 40.1 | 13.83 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 90% | -5.0 | 32.4 | 3.93 | 35.1 | 4.63 | 37.8 | 5.21 | 40.5 | 5.90 | 43.2 | 6.36 | 45.9 | 6.83 | 48.6 | 7.35 |
| | 0.0 | 32.4 | 4.05 | 35.1 | 4.74 | 37.8 | 5.32 | 40.5 | 5.96 | 43.2 | 6.48 | 45.9 | 7.06 | 48.6 | 7.64 |
| | 5.0 | 32.4 | 4.17 | 35.1 | 4.86 | 37.8 | 5.44 | 40.5 | 6.07 | 43.2 | 6.71 | 45.9 | 7.29 | 48.6 | 7.87 |
| | 10.0 | 32.4 | 4.45 | 35.1 | 4.98 | 37.8 | 5.55 | 40.5 | 6.13 | 43.2 | 6.94 | 45.9 | 7.64 | 48.6 | 8.45 |
| | 15.0 | 32.4 | 4.80 | 35.1 | 5.32 | 37.8 | 5.90 | 40.5 | 6.36 | 43.2 | 7.29 | 45.9 | 8.33 | 48.6 | 9.26 |
| | 20.0 | 32.4 | 5.21 | 35.1 | 5.79 | 37.8 | 6.25 | 40.5 | 6.83 | 43.2 | 7.98 | 45.9 | 9.26 | 48.6 | 10.41 |
| | 25.0 | 32.4 | 6.02 | 35.1 | 6.60 | 37.8 | 7.17 | 40.5 | 7.75 | 43.2 | 9.03 | 45.9 | 10.76 | 47.8 | 11.09 |
| | 30.0 | 32.4 | 6.94 | 35.1 | 7.64 | 37.8 | 8.45 | 40.5 | 9.14 | 43.2 | 11.11 | 44.6 | 11.34 | 46.2 | 11.77 |
| | 35.0 | 32.4 | 8.22 | 35.1 | 9.37 | 37.8 | 10.41 | 40.5 | 11.57 | 41.3 | 11.68 | 42.1 | 11.78 | 43.2 | 11.89 |
| | 40.0 | 32.4 | 10.18 | 34.8 | 11.34 | 35.6 | 11.65 | 36.5 | 11.74 | 37.3 | 11.83 | 38.1 | 11.91 | 38.9 | 11.99 |
| | 43.0 | 32.4 | 11.80 | 32.4 | 11.80 | 32.4 | 11.80 | 32.4 | 11.83 | 33.6 | 11.88 | 34.8 | 11.94 | 36.0 | 12.03 |

# 9. SPW-C1405DXHN8 (Cooling)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 80% | -5.0 | 28.8 | 3.39 | 31.2 | 3.99 | 33.6 | 4.49 | 36.0 | 5.09 | 38.4 | 5.49 | 40.8 | 5.89 | 43.2 | 6.33 |
| | 0.0 | 28.8 | 3.49 | 31.2 | 4.09 | 33.6 | 4.59 | 36.0 | 5.14 | 38.4 | 5.59 | 40.8 | 6.08 | 43.2 | 6.58 |
| | 5.0 | 28.8 | 3.59 | 31.2 | 4.19 | 33.6 | 4.69 | 36.0 | 5.24 | 38.4 | 5.79 | 40.8 | 6.28 | 43.2 | 6.78 |
| | 10.0 | 28.8 | 3.84 | 31.2 | 4.29 | 33.6 | 4.79 | 36.0 | 5.29 | 38.4 | 5.99 | 40.8 | 6.58 | 43.2 | 7.28 |
| | 15.0 | 28.8 | 4.14 | 31.2 | 4.59 | 33.6 | 5.09 | 36.0 | 5.49 | 38.4 | 6.28 | 40.8 | 7.18 | 43.2 | 7.98 |
| | 20.0 | 28.8 | 4.49 | 31.2 | 4.99 | 33.6 | 5.39 | 36.0 | 5.89 | 38.4 | 6.88 | 40.8 | 7.98 | 43.2 | 8.98 |
| | 25.0 | 28.8 | 5.19 | 31.2 | 5.69 | 33.6 | 6.18 | 36.0 | 6.68 | 38.4 | 7.78 | 40.8 | 9.28 | 42.5 | 9.56 |
| | 30.0 | 28.8 | 5.99 | 31.2 | 6.58 | 33.6 | 7.28 | 36.0 | 7.88 | 38.4 | 9.58 | 39.6 | 9.78 | 41.0 | 10.14 |
| | 35.0 | 28.8 | 7.08 | 31.2 | 8.08 | 33.6 | 8.98 | 36.0 | 9.98 | 36.7 | 10.06 | 37.4 | 10.15 | 38.4 | 10.25 |
| | 40.0 | 28.8 | 8.78 | 31.0 | 9.78 | 31.7 | 10.04 | 32.4 | 10.12 | 33.1 | 10.19 | 33.8 | 10.26 | 34.6 | 10.33 |
| | 43.0 | 28.8 | 10.17 | 28.8 | 10.17 | 28.8 | 10.17 | 28.8 | 10.19 | 29.9 | 10.24 | 31.0 | 10.29 | 32.0 | 10.37 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 70% | -5.0 | 25.2 | 2.85 | 27.3 | 3.35 | 29.4 | 3.77 | 31.5 | 4.27 | 33.6 | 4.61 | 35.7 | 4.94 | 37.8 | 5.32 |
| | 0.0 | 25.2 | 2.93 | 27.3 | 3.44 | 29.4 | 3.85 | 31.5 | 4.32 | 33.6 | 4.69 | 35.7 | 5.11 | 37.8 | 5.53 |
| | 5.0 | 25.2 | 3.02 | 27.3 | 3.52 | 29.4 | 3.94 | 31.5 | 4.40 | 33.6 | 4.86 | 35.7 | 5.28 | 37.8 | 5.70 |
| | 10.0 | 25.2 | 3.23 | 27.3 | 3.60 | 29.4 | 4.02 | 31.5 | 4.44 | 33.6 | 5.03 | 35.7 | 5.53 | 37.8 | 6.12 |
| | 15.0 | 25.2 | 3.48 | 27.3 | 3.85 | 29.4 | 4.27 | 31.5 | 4.61 | 33.6 | 5.28 | 35.7 | 6.03 | 37.8 | 6.70 |
| | 20.0 | 25.2 | 3.77 | 27.3 | 4.19 | 29.4 | 4.52 | 31.5 | 4.94 | 33.6 | 5.78 | 35.7 | 6.70 | 37.8 | 7.54 |
| | 25.0 | 25.2 | 4.36 | 27.3 | 4.78 | 29.4 | 5.19 | 31.5 | 5.61 | 33.6 | 6.54 | 35.7 | 7.79 | 37.2 | 8.03 |
| | 30.0 | 25.2 | 5.03 | 27.3 | 5.53 | 29.4 | 6.12 | 31.5 | 6.62 | 33.6 | 8.04 | 34.7 | 8.21 | 35.9 | 8.52 |
| | 35.0 | 25.2 | 5.95 | 27.3 | 6.79 | 29.4 | 7.54 | 31.5 | 8.38 | 32.1 | 8.45 | 32.8 | 8.53 | 33.6 | 8.61 |
| | 40.0 | 25.2 | 7.37 | 27.1 | 8.21 | 27.7 | 8.44 | 28.4 | 8.50 | 29.0 | 8.56 | 29.6 | 8.62 | 30.2 | 8.68 |
| | 43.0 | 25.2 | 8.55 | 25.2 | 8.55 | 25.2 | 8.55 | 25.2 | 8.56 | 26.1 | 8.61 | 27.1 | 8.65 | 28.0 | 8.71 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 60% | -5.0 | 21.6 | 2.31 | 23.4 | 2.71 | 25.2 | 3.05 | 27.0 | 3.46 | 28.8 | 3.73 | 30.6 | 4.00 | 32.4 | 4.31 |
| | 0.0 | 21.6 | 2.37 | 23.4 | 2.78 | 25.2 | 3.12 | 27.0 | 3.49 | 28.8 | 3.80 | 30.6 | 4.14 | 32.4 | 4.48 |
| | 5.0 | 21.6 | 2.44 | 23.4 | 2.85 | 25.2 | 3.19 | 27.0 | 3.56 | 28.8 | 3.93 | 30.6 | 4.27 | 32.4 | 4.61 |
| | 10.0 | 21.6 | 2.61 | 23.4 | 2.92 | 25.2 | 3.26 | 27.0 | 3.59 | 28.8 | 4.07 | 30.6 | 4.48 | 32.4 | 4.95 |
| | 15.0 | 21.6 | 2.81 | 23.4 | 3.12 | 25.2 | 3.46 | 27.0 | 3.73 | 28.8 | 4.27 | 30.6 | 4.88 | 32.4 | 5.43 |
| | 20.0 | 21.6 | 3.05 | 23.4 | 3.39 | 25.2 | 3.66 | 27.0 | 4.00 | 28.8 | 4.68 | 30.6 | 5.43 | 32.4 | 6.10 |
| | 25.0 | 21.6 | 3.53 | 23.4 | 3.87 | 25.2 | 4.21 | 27.0 | 4.54 | 28.8 | 5.29 | 30.6 | 6.31 | 31.9 | 6.50 |
| | 30.0 | 21.6 | 4.07 | 23.4 | 4.48 | 25.2 | 4.95 | 27.0 | 5.36 | 28.8 | 6.51 | 29.7 | 6.65 | 30.8 | 6.90 |
| | 35.0 | 21.6 | 4.82 | 23.4 | 5.49 | 25.2 | 6.10 | 27.0 | 6.78 | 27.5 | 6.84 | 28.1 | 6.91 | 28.8 | 6.97 |
| | 40.0 | 21.6 | 5.97 | 23.2 | 6.65 | 23.8 | 6.83 | 24.3 | 6.88 | 24.8 | 6.93 | 25.4 | 6.98 | 25.9 | 7.03 |
| | 43.0 | 21.6 | 6.92 | 21.6 | 6.92 | 21.6 | 6.92 | 21.6 | 6.93 | 22.4 | 6.97 | 23.2 | 7.00 | 24.0 | 7.05 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. °CDB | Indoor air temp. : °CWB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16.0 | | 17.0 | | 18.0 | | 19.0 | | 20.0 | | 21.0 | | 22.0 | |
| | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 50% | -5.0 | 18.0 | 1.76 | 19.5 | 2.07 | 21.0 | 2.33 | 22.5 | 2.65 | 24.0 | 2.85 | 25.5 | 3.06 | 27.0 | 3.29 |
| | 0.0 | 18.0 | 1.82 | 19.5 | 2.13 | 21.0 | 2.39 | 22.5 | 2.67 | 24.0 | 2.90 | 25.5 | 3.16 | 27.0 | 3.42 |
| | 5.0 | 18.0 | 1.87 | 19.5 | 2.18 | 21.0 | 2.44 | 22.5 | 2.72 | 24.0 | 3.01 | 25.5 | 3.27 | 27.0 | 3.53 |
| | 10.0 | 18.0 | 2.00 | 19.5 | 2.23 | 21.0 | 2.49 | 22.5 | 2.75 | 24.0 | 3.11 | 25.5 | 3.42 | 27.0 | 3.79 |
| | 15.0 | 18.0 | 2.15 | 19.5 | 2.39 | 21.0 | 2.65 | 22.5 | 2.85 | 24.0 | 3.27 | 25.5 | 3.73 | 27.0 | 4.15 |
| | 20.0 | 18.0 | 2.33 | 19.5 | 2.59 | 21.0 | 2.80 | 22.5 | 3.06 | 24.0 | 3.58 | 25.5 | 4.15 | 27.0 | 4.67 |
| | 25.0 | 18.0 | 2.70 | 19.5 | 2.96 | 21.0 | 3.22 | 22.5 | 3.48 | 24.0 | 4.05 | 25.5 | 4.82 | 26.6 | 4.97 |
| | 30.0 | 18.0 | 3.11 | 19.5 | 3.42 | 21.0 | 3.79 | 22.5 | 4.10 | 24.0 | 4.98 | 24.8 | 5.08 | 25.7 | 5.28 |
| | 35.0 | 18.0 | 3.68 | 19.5 | 4.20 | 21.0 | 4.67 | 22.5 | 5.19 | 23.0 | 5.23 | 23.4 | 5.28 | 24.0 | 5.33 |
| | 40.0 | 18.0 | 4.56 | 19.4 | 5.08 | 19.8 | 5.22 | 20.3 | 5.26 | 20.7 | 5.30 | 21.2 | 5.34 | 21.6 | 5.37 |
| | 43.0 | 18.0 | 5.29 | 18.0 | 5.29 | 18.0 | 5.29 | 18.0 | 5.30 | 18.7 | 5.33 | 19.4 | 5.35 | 20.0 | 5.39 |

# 10. SPW-C1405DXHN8 (Heating)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 130% | -19.8 | -20.0 | 35.5 | 13.22 | 34.1 | 13.07 | 32.7 | 12.92 | 32.0 | 12.85 | 31.3 | 12.78 | 29.9 | 12.63 | 28.5 | 12.48 |
| | -14.7 | -15.0 | 41.9 | 14.11 | 40.6 | 13.96 | 39.2 | 13.81 | 38.5 | 13.74 | 37.8 | 13.67 | 36.4 | 13.52 | 35.0 | 13.37 |
| | -9.6 | -10.0 | 48.4 | 15.00 | 47.1 | 14.85 | 45.7 | 14.71 | 45.0 | 14.63 | 44.3 | 14.56 | 42.9 | 14.41 | 41.5 | 14.26 |
| | -4.4 | -5.0 | 55.0 | 15.89 | 53.6 | 15.75 | 52.2 | 15.60 | 51.5 | 15.52 | 50.8 | 15.45 | 48.4 | 15.23 | 44.7 | 14.53 |
| | -1.8 | -2.5 | 58.2 | 16.34 | 56.8 | 16.19 | 55.5 | 16.03 | 53.9 | 15.68 | 52.1 | 15.33 | 48.4 | 14.63 | 44.7 | 13.93 |
| | 0.8 | 0.0 | 61.5 | 16.79 | 59.4 | 16.13 | 55.7 | 15.43 | 53.9 | 15.08 | 52.1 | 14.73 | 48.4 | 14.03 | 44.7 | 13.34 |
| | 2.8 | 2.0 | 63.1 | 16.35 | 59.4 | 15.65 | 55.7 | 14.95 | 53.9 | 14.60 | 52.1 | 14.25 | 48.4 | 13.56 | 44.7 | 12.86 |
| | 6.0 | 5.0 | 63.1 | 15.63 | 59.4 | 14.93 | 55.7 | 14.23 | 53.9 | 13.89 | 52.1 | 13.54 | 48.4 | 12.84 | 44.7 | 12.14 |
| | 7.0 | 6.0 | 63.1 | 15.39 | 59.4 | 14.69 | 55.7 | 14.00 | 53.9 | 13.41 | 52.1 | 13.30 | 48.4 | 12.60 | 44.7 | 11.90 |
| | 8.6 | 7.5 | 63.1 | 15.03 | 59.4 | 14.34 | 55.7 | 13.64 | 53.9 | 13.29 | 52.1 | 12.94 | 48.4 | 12.24 | 44.7 | 11.55 |
| | 11.2 | 10.0 | 63.1 | 14.44 | 59.4 | 13.74 | 55.7 | 13.04 | 53.9 | 12.69 | 52.1 | 12.34 | 48.4 | 11.65 | 44.7 | 10.95 |
| | 16.4 | 15.0 | 63.1 | 13.24 | 59.4 | 12.54 | 55.7 | 11.85 | 53.9 | 11.50 | 52.1 | 11.15 | 48.4 | 10.45 | 44.7 | 9.76 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 120% | -19.8 | -20.0 | 34.6 | 13.15 | 33.2 | 13.01 | 31.9 | 12.86 | 31.2 | 12.79 | 30.5 | 12.71 | 29.1 | 12.57 | 27.8 | 12.42 |
| | -14.7 | -15.0 | 40.9 | 14.04 | 39.5 | 13.89 | 38.1 | 13.75 | 37.5 | 13.67 | 36.8 | 13.60 | 35.4 | 13.45 | 34.1 | 13.31 |
| | -9.6 | -10.0 | 47.2 | 14.93 | 45.8 | 14.78 | 44.5 | 14.63 | 43.8 | 14.56 | 43.1 | 14.49 | 41.8 | 14.34 | 40.4 | 14.19 |
| | -4.4 | -5.0 | 53.5 | 15.82 | 52.2 | 15.67 | 50.8 | 15.52 | 50.2 | 15.45 | 49.5 | 15.38 | 47.1 | 15.15 | 43.6 | 14.46 |
| | -1.8 | -2.5 | 56.7 | 16.26 | 55.4 | 16.11 | 54.0 | 15.95 | 52.5 | 15.60 | 50.7 | 15.25 | 47.1 | 14.56 | 43.6 | 13.86 |
| | 0.8 | 0.0 | 59.9 | 16.70 | 57.9 | 16.05 | 54.3 | 15.35 | 52.5 | 15.01 | 50.7 | 14.66 | 47.1 | 13.96 | 43.6 | 13.27 |
| | 2.8 | 2.0 | 61.4 | 16.27 | 57.9 | 15.57 | 54.3 | 14.88 | 52.5 | 14.53 | 50.7 | 14.18 | 47.1 | 13.49 | 43.6 | 12.80 |
| | 6.0 | 5.0 | 61.4 | 15.55 | 57.9 | 14.86 | 54.3 | 14.16 | 52.5 | 13.82 | 50.7 | 13.47 | 47.1 | 12.78 | 43.6 | 12.08 |
| | 7.0 | 6.0 | 61.4 | 15.31 | 57.9 | 14.62 | 54.3 | 13.93 | 52.5 | 13.35 | 50.7 | 13.23 | 47.1 | 12.54 | 43.6 | 11.85 |
| | 8.6 | 7.5 | 61.4 | 14.96 | 57.9 | 14.26 | 54.3 | 13.57 | 52.5 | 13.22 | 50.7 | 12.88 | 47.1 | 12.18 | 43.6 | 11.49 |
| | 11.2 | 10.0 | 61.4 | 14.36 | 57.9 | 13.67 | 54.3 | 12.98 | 52.5 | 12.63 | 50.7 | 12.28 | 47.1 | 11.59 | 43.6 | 10.90 |
| | 16.4 | 15.0 | 61.4 | 13.18 | 57.9 | 12.48 | 54.3 | 11.79 | 52.5 | 11.44 | 50.7 | 11.10 | 47.1 | 10.40 | 43.6 | 9.71 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 110% | -19.8 | -20.0 | 33.8 | 13.09 | 32.5 | 12.94 | 31.2 | 12.80 | 30.5 | 12.72 | 29.9 | 12.65 | 28.5 | 12.50 | 27.2 | 12.36 |
| | -14.7 | -15.0 | 40.0 | 13.97 | 38.7 | 13.82 | 37.3 | 13.68 | 36.7 | 13.61 | 36.0 | 13.53 | 34.7 | 13.39 | 33.4 | 13.24 |
| | -9.6 | -10.0 | 46.2 | 14.85 | 44.9 | 14.71 | 43.5 | 14.56 | 42.9 | 14.49 | 42.2 | 14.42 | 40.9 | 14.27 | 39.6 | 14.12 |
| | -4.4 | -5.0 | 52.4 | 15.74 | 51.1 | 15.59 | 49.8 | 15.45 | 49.1 | 15.37 | 48.4 | 15.30 | 46.2 | 15.08 | 42.7 | 14.39 |
| | -1.8 | -2.5 | 55.5 | 16.18 | 54.2 | 16.03 | 52.9 | 15.87 | 51.4 | 15.52 | 49.7 | 15.18 | 46.2 | 14.49 | 42.7 | 13.80 |
| | 0.8 | 0.0 | 58.7 | 16.62 | 56.6 | 15.97 | 53.1 | 15.28 | 51.4 | 14.93 | 49.7 | 14.59 | 46.2 | 13.90 | 42.7 | 13.20 |
| | 2.8 | 2.0 | 60.1 | 16.18 | 56.6 | 15.49 | 53.1 | 14.80 | 51.4 | 14.46 | 49.7 | 14.11 | 46.2 | 13.42 | 42.7 | 12.73 |
| | 6.0 | 5.0 | 60.1 | 15.48 | 56.6 | 14.79 | 53.1 | 14.09 | 51.4 | 13.75 | 49.7 | 13.40 | 46.2 | 12.71 | 42.7 | 12.02 |
| | 7.0 | 6.0 | 60.1 | 15.24 | 56.6 | 14.55 | 53.1 | 13.86 | 51.4 | 13.28 | 49.7 | 13.17 | 46.2 | 12.48 | 42.7 | 11.79 |
| | 8.6 | 7.5 | 60.1 | 14.88 | 56.6 | 14.19 | 53.1 | 13.50 | 51.4 | 13.16 | 49.7 | 12.81 | 46.2 | 12.12 | 42.7 | 11.43 |
| | 11.2 | 10.0 | 60.1 | 14.29 | 56.6 | 13.60 | 53.1 | 12.91 | 51.4 | 12.57 | 49.7 | 12.22 | 46.2 | 11.53 | 42.7 | 10.84 |
| | 16.4 | 15.0 | 60.1 | 13.11 | 56.6 | 12.42 | 53.1 | 11.73 | 51.4 | 11.39 | 49.7 | 11.04 | 46.2 | 10.35 | 42.7 | 9.66 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 100% | -19.8 | -20.0 | 32.9 | 13.01 | 31.6 | 12.86 | 30.3 | 12.72 | 29.7 | 12.65 | 29.0 | 12.57 | 27.8 | 12.43 | 26.5 | 12.28 |
| | -14.7 | -15.0 | 38.9 | 13.89 | 37.6 | 13.74 | 36.3 | 13.60 | 35.7 | 13.52 | 35.0 | 13.45 | 33.8 | 13.31 | 32.5 | 13.16 |
| | -9.6 | -10.0 | 44.9 | 14.77 | 43.6 | 14.62 | 42.4 | 14.48 | 41.7 | 14.40 | 41.1 | 14.33 | 39.8 | 14.18 | 38.5 | 14.04 |
| | -4.4 | -5.0 | 51.0 | 15.64 | 49.7 | 15.50 | 48.4 | 15.35 | 47.8 | 15.28 | 47.1 | 15.21 | 44.9 | 14.99 | 41.5 | 14.30 |
| | -1.8 | -2.5 | 54.0 | 16.08 | 52.7 | 15.94 | 51.4 | 15.77 | 50.0 | 15.43 | 48.3 | 15.09 | 44.9 | 14.40 | 41.5 | 13.71 |
| | 0.8 | 0.0 | 57.1 | 16.52 | 55.1 | 15.87 | 51.7 | 15.19 | 50.0 | 14.84 | 48.3 | 14.50 | 44.9 | 13.81 | 41.5 | 13.13 |
| | 2.8 | 2.0 | 58.5 | 16.09 | 55.1 | 15.40 | 51.7 | 14.72 | 50.0 | 14.37 | 48.3 | 14.03 | 44.9 | 13.34 | 41.5 | 12.66 |
| | 6.0 | 5.0 | 58.5 | 15.38 | 55.1 | 14.70 | 51.7 | 14.01 | 50.0 | 13.67 | 48.3 | 13.32 | 44.9 | 12.64 | 41.5 | 11.95 |
| | 7.0 | 6.0 | 58.5 | 15.15 | 55.1 | 14.46 | 51.7 | 13.78 | 50.0 | 13.20 | 48.3 | 13.09 | 44.9 | 12.40 | 41.5 | 11.72 |
| | 8.6 | 7.5 | 58.5 | 14.80 | 55.1 | 14.11 | 51.7 | 13.42 | 50.0 | 13.08 | 48.3 | 12.74 | 44.9 | 12.05 | 41.5 | 11.36 |
| | 11.2 | 10.0 | 58.5 | 14.21 | 55.1 | 13.52 | 51.7 | 12.84 | 50.0 | 12.49 | 48.3 | 12.15 | 44.9 | 11.46 | 41.5 | 10.78 |
| | 16.4 | 15.0 | 58.5 | 13.03 | 55.1 | 12.35 | 51.7 | 11.66 | 50.0 | 11.32 | 48.3 | 10.97 | 44.9 | 10.29 | 41.5 | 9.60 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 90% | -19.8 | -20.0 | 29.6 | 11.58 | 28.5 | 11.45 | 27.3 | 11.32 | 26.7 | 11.26 | 26.1 | 11.19 | 25.0 | 11.06 | 23.8 | 10.93 |
| | -14.7 | -15.0 | 35.0 | 12.36 | 33.9 | 12.23 | 32.7 | 12.10 | 32.1 | 12.04 | 31.5 | 11.97 | 30.4 | 11.84 | 29.2 | 11.71 |
| | -9.6 | -10.0 | 40.4 | 13.14 | 39.3 | 13.01 | 38.1 | 12.88 | 37.5 | 12.82 | 37.0 | 12.75 | 35.8 | 12.62 | 34.6 | 12.50 |
| | -4.4 | -5.0 | 45.9 | 13.92 | 44.7 | 13.79 | 43.6 | 13.66 | 43.0 | 13.60 | 42.4 | 13.53 | 40.4 | 13.34 | 37.4 | 12.73 |
| | -1.8 | -2.5 | 48.6 | 14.31 | 47.5 | 14.18 | 46.3 | 14.04 | 45.0 | 13.73 | 43.5 | 13.43 | 40.4 | 12.82 | 37.4 | 12.20 |
| | 0.8 | 0.0 | 51.4 | 14.70 | 49.6 | 14.13 | 46.5 | 13.51 | 45.0 | 13.21 | 43.5 | 12.90 | 40.4 | 12.29 | 37.4 | 11.68 |
| | 2.8 | 2.0 | 52.7 | 14.32 | 49.6 | 13.71 | 46.5 | 13.10 | 45.0 | 12.79 | 43.5 | 12.49 | 40.4 | 11.87 | 37.4 | 11.26 |
| | 6.0 | 5.0 | 52.7 | 13.69 | 49.6 | 13.08 | 46.5 | 12.47 | 45.0 | 12.16 | 43.5 | 11.86 | 40.4 | 11.25 | 37.4 | 10.64 |
| | 7.0 | 6.0 | 52.7 | 13.48 | 49.6 | 12.87 | 46.5 | 12.26 | 45.0 | 11.75 | 43.5 | 11.65 | 40.4 | 11.04 | 37.4 | 10.43 |
| | 8.6 | 7.5 | 52.7 | 13.17 | 49.6 | 12.56 | 46.5 | 11.95 | 45.0 | 11.64 | 43.5 | 11.34 | 40.4 | 10.72 | 37.4 | 10.11 |
| | 11.2 | 10.0 | 52.7 | 12.65 | 49.6 | 12.03 | 46.5 | 11.42 | 45.0 | 11.12 | 43.5 | 10.81 | 40.4 | 10.20 | 37.4 | 9.59 |
| | 16.4 | 15.0 | 52.7 | 11.60 | 49.6 | 10.99 | 46.5 | 10.38 | 45.0 | 10.07 | 43.5 | 9.77 | 40.4 | 9.16 | 37.4 | 8.55 |

# 10. SPW-C1405DXHN8 (Heating)

## Capacity Ratio 50-130%

TC: Total capacity (kW), PI: Power input (kW)

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 80% | -19.8 | -20.0 | 26.3 | 10.28 | 25.3 | 10.16 | 24.3 | 10.05 | 23.8 | 9.99 | 23.2 | 9.93 | 22.2 | 9.82 | 21.2 | 9.70 |
| | -14.7 | -15.0 | 31.1 | 10.97 | 30.1 | 10.86 | 29.1 | 10.74 | 28.5 | 10.68 | 28.0 | 10.63 | 27.0 | 10.51 | 26.0 | 10.40 |
| | -9.6 | -10.0 | 36.0 | 11.66 | 34.9 | 11.55 | 33.9 | 11.44 | 33.4 | 11.38 | 32.9 | 11.32 | 31.8 | 11.21 | 30.8 | 11.09 |
| | -4.4 | -5.0 | 40.8 | 12.36 | 39.8 | 12.24 | 38.7 | 12.13 | 38.2 | 12.07 | 37.7 | 12.01 | 35.9 | 11.84 | 33.2 | 11.30 |
| | -1.8 | -2.5 | 43.2 | 12.70 | 42.2 | 12.59 | 41.2 | 12.46 | 40.0 | 12.19 | 38.6 | 11.92 | 35.9 | 11.38 | 33.2 | 10.83 |
| | 0.8 | 0.0 | 45.7 | 13.05 | 44.1 | 12.54 | 41.4 | 12.00 | 40.0 | 11.73 | 38.6 | 11.45 | 35.9 | 10.91 | 33.2 | 10.37 |
| | 2.8 | 2.0 | 46.8 | 12.71 | 44.1 | 12.17 | 41.4 | 11.63 | 40.0 | 11.35 | 38.6 | 11.08 | 35.9 | 10.54 | 33.2 | 10.00 |
| | 6.0 | 5.0 | 46.8 | 12.15 | 44.1 | 11.61 | 41.4 | 11.07 | 40.0 | 10.80 | 38.6 | 10.53 | 35.9 | 9.98 | 33.2 | 9.44 |
| | 7.0 | 6.0 | 46.8 | 11.97 | 44.1 | 11.42 | 41.4 | 10.88 | 40.0 | 10.43 | 38.6 | 10.34 | 35.9 | 9.80 | 33.2 | 9.26 |
| | 8.6 | 7.5 | 46.8 | 11.69 | 44.1 | 11.15 | 41.4 | 10.60 | 40.0 | 10.33 | 38.6 | 10.06 | 35.9 | 9.52 | 33.2 | 8.98 |
| | 11.2 | 10.0 | 46.8 | 11.22 | 44.1 | 10.68 | 41.4 | 10.14 | 40.0 | 9.87 | 38.6 | 9.60 | 35.9 | 9.06 | 33.2 | 8.51 |
| | 16.4 | 15.0 | 46.8 | 10.30 | 44.1 | 9.75 | 41.4 | 9.21 | 40.0 | 8.94 | 38.6 | 8.67 | 35.9 | 8.13 | 33.2 | 7.59 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 70% | -19.8 | -20.0 | 23.0 | 8.85 | 22.1 | 8.75 | 21.2 | 8.65 | 20.8 | 8.60 | 20.3 | 8.55 | 19.4 | 8.45 | 18.5 | 8.35 |
| | -14.7 | -15.0 | 27.2 | 9.44 | 26.3 | 9.34 | 25.4 | 9.25 | 25.0 | 9.20 | 24.5 | 9.15 | 23.6 | 9.05 | 22.7 | 8.95 |
| | -9.6 | -10.0 | 31.5 | 10.04 | 30.6 | 9.94 | 29.7 | 9.84 | 29.2 | 9.79 | 28.7 | 9.74 | 27.8 | 9.65 | 26.9 | 9.55 |
| | -4.4 | -5.0 | 35.7 | 10.64 | 34.8 | 10.54 | 33.9 | 10.44 | 33.4 | 10.39 | 33.0 | 10.34 | 31.4 | 10.19 | 29.1 | 9.72 |
| | -1.8 | -2.5 | 37.8 | 10.94 | 36.9 | 10.84 | 36.0 | 10.73 | 35.0 | 10.49 | 33.8 | 10.26 | 31.4 | 9.79 | 29.1 | 9.33 |
| | 0.8 | 0.0 | 39.9 | 11.23 | 38.6 | 10.79 | 36.2 | 10.33 | 35.0 | 10.09 | 33.8 | 9.86 | 31.4 | 9.39 | 29.1 | 8.93 |
| | 2.8 | 2.0 | 41.0 | 10.94 | 38.6 | 10.47 | 36.2 | 10.01 | 35.0 | 9.77 | 33.8 | 9.54 | 31.4 | 9.07 | 29.1 | 8.61 |
| | 6.0 | 5.0 | 41.0 | 10.46 | 38.6 | 9.99 | 36.2 | 9.53 | 35.0 | 9.29 | 33.8 | 9.06 | 31.4 | 8.59 | 29.1 | 8.13 |
| | 7.0 | 6.0 | 41.0 | 10.30 | 38.6 | 9.83 | 36.2 | 9.37 | 35.0 | 8.98 | 33.8 | 8.90 | 31.4 | 8.43 | 29.1 | 7.97 |
| | 8.6 | 7.5 | 41.0 | 10.06 | 38.6 | 9.59 | 36.2 | 9.13 | 35.0 | 8.89 | 33.8 | 8.66 | 31.4 | 8.19 | 29.1 | 7.73 |
| | 11.2 | 10.0 | 41.0 | 9.66 | 38.6 | 9.20 | 36.2 | 8.73 | 35.0 | 8.49 | 33.8 | 8.26 | 31.4 | 7.79 | 29.1 | 7.33 |
| | 16.4 | 15.0 | 41.0 | 8.86 | 38.6 | 8.40 | 36.2 | 7.93 | 35.0 | 7.70 | 33.8 | 7.46 | 31.4 | 7.00 | 29.1 | 6.53 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 60% | -19.8 | -20.0 | 19.8 | 7.55 | 19.0 | 7.46 | 18.2 | 7.38 | 17.8 | 7.34 | 17.4 | 7.29 | 16.7 | 7.21 | 15.9 | 7.12 |
| | -14.7 | -15.0 | 23.3 | 8.05 | 22.6 | 7.97 | 21.8 | 7.89 | 21.4 | 7.84 | 21.0 | 7.80 | 20.3 | 7.72 | 19.5 | 7.63 |
| | -9.6 | -10.0 | 27.0 | 8.56 | 26.2 | 8.48 | 25.4 | 8.40 | 25.0 | 8.35 | 24.6 | 8.31 | 23.9 | 8.23 | 23.1 | 8.14 |
| | -4.4 | -5.0 | 30.6 | 9.07 | 29.8 | 8.99 | 29.0 | 8.90 | 28.7 | 8.86 | 28.3 | 8.82 | 26.9 | 8.69 | 24.9 | 8.29 |
| | -1.8 | -2.5 | 32.4 | 9.33 | 31.6 | 9.24 | 30.9 | 9.15 | 30.0 | 8.95 | 29.0 | 8.75 | 26.9 | 8.35 | 24.9 | 7.95 |
| | 0.8 | 0.0 | 34.2 | 9.58 | 33.1 | 9.21 | 31.0 | 8.81 | 30.0 | 8.61 | 29.0 | 8.41 | 26.9 | 8.01 | 24.9 | 7.61 |
| | 2.8 | 2.0 | 35.1 | 9.33 | 33.1 | 8.93 | 31.0 | 8.53 | 30.0 | 8.34 | 29.0 | 8.14 | 26.9 | 7.74 | 24.9 | 7.34 |
| | 6.0 | 5.0 | 35.1 | 8.92 | 33.1 | 8.52 | 31.0 | 8.13 | 30.0 | 7.93 | 29.0 | 7.73 | 26.9 | 7.33 | 24.9 | 6.93 |
| | 7.0 | 6.0 | 35.1 | 8.79 | 33.1 | 8.39 | 31.0 | 7.99 | 30.0 | 7.66 | 29.0 | 7.59 | 26.9 | 7.19 | 24.9 | 6.80 |
| | 8.6 | 7.5 | 35.1 | 8.58 | 33.1 | 8.18 | 31.0 | 7.79 | 30.0 | 7.59 | 29.0 | 7.39 | 26.9 | 6.99 | 24.9 | 6.59 |
| | 11.2 | 10.0 | 35.1 | 8.24 | 33.1 | 7.84 | 31.0 | 7.44 | 30.0 | 7.25 | 29.0 | 7.05 | 26.9 | 6.65 | 24.9 | 6.25 |
| | 16.4 | 15.0 | 35.1 | 7.56 | 33.1 | 7.16 | 31.0 | 6.76 | 30.0 | 6.56 | 29.0 | 6.37 | 26.9 | 5.97 | 24.9 | 5.57 |

| Combination(%): Indoor/outdoor capacity ratio | Outdoor air temp. | | Indoor air temp. : °CDB | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 15.0 | | 17.0 | | 19.0 | | 20.0 | | 21.0 | | 23.0 | | 25.0 | |
| | | | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI | TC | PI |
| | °CDB | °CWB | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW | kW |
| 50% | -19.8 | -20.0 | 16.5 | 6.24 | 15.8 | 6.18 | 15.2 | 6.11 | 14.8 | 6.07 | 14.5 | 6.04 | 13.9 | 5.97 | 13.2 | 5.90 |
| | -14.7 | -15.0 | 19.5 | 6.67 | 18.8 | 6.60 | 18.2 | 6.53 | 17.8 | 6.49 | 17.5 | 6.46 | 16.9 | 6.39 | 16.2 | 6.32 |
| | -9.6 | -10.0 | 22.5 | 7.09 | 21.8 | 7.02 | 21.2 | 6.95 | 20.9 | 6.91 | 20.5 | 6.88 | 19.9 | 6.81 | 19.2 | 6.74 |
| | -4.4 | -5.0 | 25.5 | 7.51 | 24.9 | 7.44 | 24.2 | 7.37 | 23.9 | 7.33 | 23.6 | 7.30 | 22.5 | 7.19 | 20.8 | 6.86 |
| | -1.8 | -2.5 | 27.0 | 7.72 | 26.4 | 7.65 | 25.7 | 7.57 | 25.0 | 7.41 | 24.2 | 7.24 | 22.5 | 6.91 | 20.8 | 6.58 |
| | 0.8 | 0.0 | 28.5 | 7.93 | 27.6 | 7.62 | 25.9 | 7.29 | 25.0 | 7.12 | 24.2 | 6.96 | 22.5 | 6.63 | 20.8 | 6.30 |
| | 2.8 | 2.0 | 29.3 | 7.72 | 27.6 | 7.39 | 25.9 | 7.06 | 25.0 | 6.90 | 24.2 | 6.73 | 22.5 | 6.40 | 20.8 | 6.07 |
| | 6.0 | 5.0 | 29.3 | 7.38 | 27.6 | 7.05 | 25.9 | 6.73 | 25.0 | 6.56 | 24.2 | 6.40 | 22.5 | 6.07 | 20.8 | 5.74 |
| | 7.0 | 6.0 | 29.3 | 7.27 | 27.6 | 6.94 | 25.9 | 6.61 | 25.0 | 6.34 | 24.2 | 6.28 | 22.5 | 5.95 | 20.8 | 5.62 |
| | 8.6 | 7.5 | 29.3 | 7.10 | 27.6 | 6.77 | 25.9 | 6.44 | 25.0 | 6.28 | 24.2 | 6.11 | 22.5 | 5.78 | 20.8 | 5.45 |
| | 11.2 | 10.0 | 29.3 | 6.82 | 27.6 | 6.49 | 25.9 | 6.16 | 25.0 | 6.00 | 24.2 | 5.83 | 22.5 | 5.50 | 20.8 | 5.17 |
| | 16.4 | 15.0 | 29.3 | 6.26 | 27.6 | 5.93 | 25.9 | 5.60 | 25.0 | 5.43 | 24.2 | 5.27 | 22.5 | 4.94 | 20.8 | 4.61 |

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